



Quarterly Progress Report #23

October/November/December 2018

To: Brian Kelly, U.S. EPA
Christopher Black, U.S. EPA
Richard Clarizio, U.S. EPA
Lori Kozel, Tetra Tech
Licia Yangouyan, City of Dearborn
Alan Loebach, City of Dearborn
Barry Murray, City of Dearborn

From: Glenn Turchan, Project Coordinator/kf/23 Date: January 15, 2019

CC: Colleen Liddell, Ford
Bert Richnafsky, Weavertown
Grant Gilezan, Dykema Gossett

Re: Removal Action Quarterly Progress Report #23
(October, November, and December 2018)
(Pursuant to Section 92 of the AOC and Section 3.2 of the
Removal Action Work Plan)
Former Dearborn Refining Site
Dearborn, Michigan

- A. Due Date: January 15, 2019
 - B. Previous Activities – October/November/December
 - Submitted the Dearborn Refining Site (Site) Quarterly Progress Report #22 for July, August, and September 2018 to the United States Environmental Protection Agency (U.S. EPA), Tetra Tech, Inc. (Tetra Tech), and the City of Dearborn on October 15, 2018.
 - Completed repairs (new fittings) to MW1-08, EX-34, and EX-35 on October 9, 2018 and October 22, 2018 consistent with Quarterly Progress Report #22.
 - Coordinated off-Site disposal of investigative derived waste (drums were removed on October 24, 2018).
 - Submitted the sentry well data to Ferrous Processing and Trading Company (FPT) on October 25, 2018.
 - Notified the U.S. EPA on November 22, 2018 that the October, November, and December 2018 quarterly Operation, Maintenance, and Monitoring (OMM) activities were scheduled to be completed on November 29, 2018.



- Completed the October, November, and December 2018 quarterly OMM activities on November 29, 2018. The inspection forms are presented in Attachment A. Water levels for the OMM wells are presented in Table 1. Light non-aqueous phase liquid (LNAPL) observations for all Site and sentry wells are presented in Table 2. Gas probe pressure readings are presented in Table 3. The groundwater levels, LNAPL observations, and gas probe readings are presented on Figure 1. The methane monitoring results are presented in Table 4. The methane monitoring results are presented on Figure 2.
- The City of Dearborn completed the quarterly Site inspection on December 14, 2018. The inspection forms and photographs are presented in Attachment A. The inspection identified existing damage to the portion of the fence located at the northern property boundary. The inspection forms identified that there was no breach associated with the damage.

C. Site Sample Analytical Data

- Air Monitoring:
 - Methane monitoring
- Waste Compatibility Analyses:
 - None
- Waste Characterization Analyses:
 - None
- Soil and Groundwater Investigation:
 - None
- ACM Abatement:
 - None

D. Document Submittals/Work Plan Modification

- Submittals:
 - Quarterly Progress Report #22 to the U.S. EPA, Tetra Tech, and City of Dearborn on October 15, 2018
 - Sentry well data to FPT on October 25, 2018
- Revision Requests:
 - None



- Work Plan Revisions:
 - None

E. Issues Identified

- New Issues and Planned Resolution:

- The monitoring well TW-1 riser was identified as requiring repair during the October, November, and December 2018 quarterly monitoring event. This repair is scheduled to be completed in the first or second quarter of 2019 (during warmer ambient air temperatures).
- In a letter dated December 7, 2018, the current Site owner (City of Dearborn) provided notice of its intention to sell the Site to The Soave Real Estate Group, Inc., which upon acquiring the Site plans to build a manufacturing facility subject to the recorded Restrictive Covenant and the remaining Administrative Settlement Agreement and Order on Consent (AOC) Site work requirements. No subsequent communications from the City of Dearborn regarding the sale of the Site have been received.

- Previously Identified Issues Pending Resolution:

- New fittings required for MW1-08, EX-34, and EX-35

The repairs to MW1-08, EX-34, and EX-35 were completed on October 9, 2018 and October 22, 2018 consistent with Quarterly Progress Report #22.

- Methane vapor

The Site has Passive Ventilation Barriers (PVBs) constructed at the northern and southern Site boundaries, as presented on Figure 2. The PVBs vent methane on Site prior to the property boundaries. Methane is not detected or measured at very low detections at the eastern and western Site boundaries during the methane monitoring events due to the Site's geology (e.g., clay present near the ground surface in either direction). The maximum methane reading collected at the eastern and western Site boundaries during the October, November, and December 2018 quarterly monitoring event was 0.2 percent (%) methane. The November 29, 2018 methane contours are presented on Figure 2.

The northern PVB has been successful at controlling the methane at the northern Site boundary. The maximum methane reading collected at the northern-most methane monitoring locations during the October, November, and December 2018 quarterly monitoring event was 0.2% methane.

The southern PVB is controlling methane migrating from the central portions of the Site. Methane is intermittently detected in the sentry wells during the methane monitoring events. The maximum methane reading collected at the sentry well monitoring locations during the October, November, and December 2018 quarterly monitoring event was 0.2% methane.



All methane results collected during the October, November, and December 2018 quarterly monitoring event were significantly less than the Michigan Act 451, Part 201 criteria of 1.25% methane with the exception of MW1-08 (17.4% methane) and MW9-10 (2.0% methane).

Methane will continue to be monitored quarterly and the results will be reported to the U.S. EPA in the Quarterly Progress Reports.

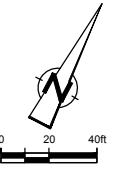
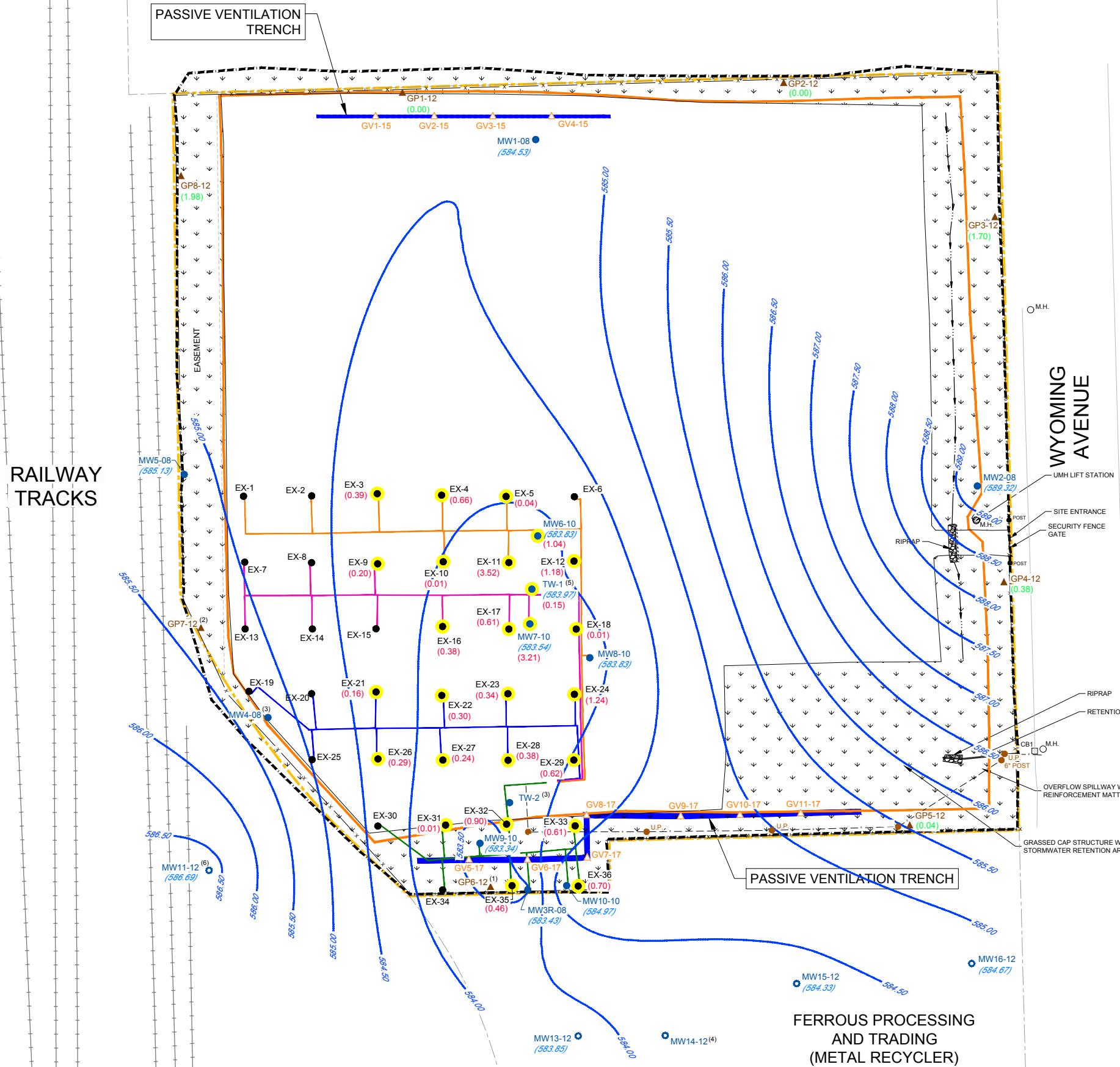
F. Current/Projected Work – January/February/March 2019

- Submit Quarterly Progress Report #23 for October/November/December 2018.
- Repair monitoring well TW-1 riser in the first or second quarter of 2019.
- OMM activities, including:
 - Quarterly monitoring of water and LNAPL levels
 - Quarterly methane and gas probe pressure monitoring

G. Status of Schedule

- Scheduling:
 - Schedules to adhere to the April 17, 2013 Project Schedule (Revision 11) as approved by the U.S. EPA on May 22, 2013

**LIBERTY TRUCK SERVICES
(TRUCK REPAIR)**



LEGEND

- PROPERTY BOUNDARY
- LEGAL BOUNDARY
- RAILWAY LINE
- C.B. □ CATCH BASIN
- U.M.H. LIFT STATION
- GRASSED AREA
- CAP LIMIT
- SWALE
- FENCELINE
- 40 MIL HDPE LINER LIMIT (LINER ANCHOR TRENCH LOCATION)
- OVERHEAD POWER LINE
- STORM CULVERT
- GROUNDWATER MONITORING WELL LOCATION
- TEST RECOVERY WELL LOCATION
- EXTRACTION WELL LOCATION
- LNAPL SENTRY WELL LOCATION
- GAS PROBE
- GAS VENT
- C.B. □ CATCH BASIN
- M.H. ○ MANHOLE
- U.P. ● UTILITY POLE
- LINE 1
- LINE 2
- LINE 3
- LINE 4
- GROUNDWATER CONTOUR (ft AMSL) (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION (ft AMSL)
- feet above mean sea level
- LIGHT NON-AQUEOUS PHASE LIQUID (LNAPL)
- THICKNESS OR SHEEN OBSERVED IN SPECIFIED WELL
- (0.01)
- (0.02)
- PRESSURE MEASUREMENT IN INCHES OF WATER COLUMN (H_2O) (MEASUREMENTS COLLECTED USING A DIGITAL MANOMETER)

NOTE:

- (1) FLOODED, UNABLE TO COLLECT READING
- (2) WATER PRESENT UNABLE TO COLLECT ACCURATE READING
- (3) FROZEN, UNABLE TO COLLECT READING
- (4) UNABLE TO ACCESS DUE TO OBSTRUCTING OBJECT
- (5) DEPTH TO WATER MEASURED FROM GROUND SURFACE. STICK UP LENGTH WAS ADDED.
- (6) MEASUREMENT IS APPROXIMATE DUE TO SHALLOW WATER LEVEL

SOURCES

- SITE LAYOUT MAP WESTON 1112120061
- FGC SURVEY, CONESTOGA ROVERS & ASSOCIATES, INC., 04/16/2008 AND SURVEY MAY 02, 2011
- EG SURVEY JULY 30, 2012 AND OCTOBER 18, 2012
- CONESTOGA ROVER & ASSOCIATES (CRA) SURVEY DECEMBER 17, 2014, DATUM: SPCS MI S NAD83, INTFT: MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) - CONTINUOUSLY OPERATING REFERENCE STATION (CORS) NETWORK

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

**FORMER DEARBORN REFINING SITE
DEARBORN, MICHIGAN**

QUARTERLY PROGRESS REPORT 23

NOVEMBER 29, 2018 WATER LEVELS
AND LNAPL OBSERVATIONS



Source Reference:

Project Manager: G. TURCHAN	Reviewed By: M. BARRERA	Date: December 2018
Scale: AS SHOWN	Project No.: 48041-00	Report No.: PRES067

Drawing No.:
figure 1

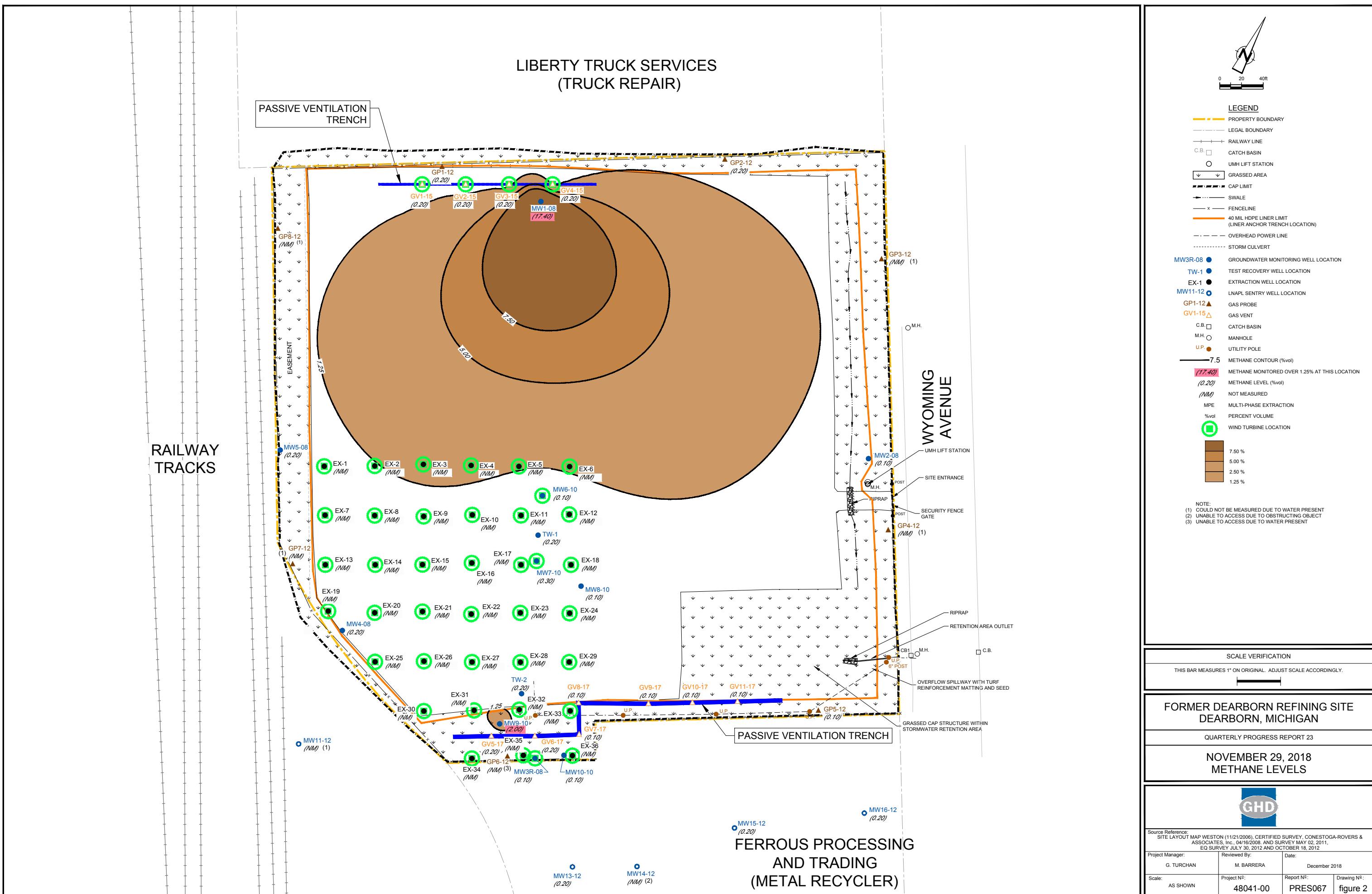


Table 1

Hydraulic Measurements
Quarterly Progress Report #23 (October, November and December 2018)
Former Dearborn Refining Site
Dearborn, Michigan

Well I.D.	Date	TOC Elevation (ft amsl)	DTP (ft BTOC)	DTW (ft BTOC)	LNAPL Thickness (ft)	Top of LNAPL Elevation (ft amsl)	Bottom of LNAPL/ Groundwater Elevation (ft amsl)	Corrected GW Elevation (ft amsl)
MW1-08	4/24/2013	592.55	--	8.60	--	--	583.95	583.95
MW1-08	5/23/2013	592.55	--	8.62	--	--	583.93	583.93
MW1-08	6/20/2013	592.55	--	8.46	--	--	584.09	584.09
MW1-08	7/25/2013	592.55	--	7.80	--	--	584.75	584.75
MW1-08	8/29/2013	592.55	--	8.77	--	--	583.78	583.78
MW1-08	9/27/2013	592.55	--	9.76	--	--	582.79	582.79
MW1-08	10/22/2013	592.55	--	9.97	--	--	582.58	582.58
MW1-08	11/21/2013	592.55	--	10.61	--	--	581.94	581.94
MW1-08	12/11/2013	592.55	--	10.73	--	--	581.82	581.82
MW1-08	1/15/2014	592.55	--	10.47	--	--	582.08	582.08
MW1-08	2/26/2014	592.55	--	10.56	--	--	581.99	581.99
MW1-08	3/25/2014	592.55	--	9.89	--	--	582.66	582.66
MW1-08	5/5/2014	592.55	--	9.27	--	--	583.28	583.28
MW1-08	9/19/2014	592.55	--	7.98	--	--	584.57	584.57
MW1-08	12/11/2014	591.41	--	8.90	--	--	582.51	582.51
MW1-08	3/9/2015	591.41	--	9.86	--	--	581.55	581.55
MW1-08	6/1/2015	591.41	--	8.75	--	--	582.66	582.66
MW1-08	8/5/2015	591.41	--	8.56	--	--	582.85	582.85
MW1-08	1/8/2016	591.41	--	9.09	--	--	582.32	582.32
MW1-08	3/18/2016	591.41	--	8.31	--	--	583.10	583.10
MW1-08	5/26/2016	591.41	--	7.93	--	--	583.48	583.48
MW1-08	8/12/2016	591.41	--	9.32	--	--	582.09	582.09
MW1-08	12/9/2016	591.41	--	8.19	--	--	583.22	583.22
MW1-08	2/27/2017	591.41	--	7.83	--	--	583.58	583.58
MW1-08	6/19/2017	591.41	--	7.32	--	--	584.09	584.09
MW1-08	9/13/2017	591.41	--	8.65	--	--	582.76	582.76
MW1-08	11/16/2017	591.41	--	9.19	--	--	582.22	582.22
MW1-08	3/22/2018	591.41	--	7.11	--	--	584.30	584.30
MW1-08	5/17/2018	591.41	--	5.95	--	--	585.46	585.46
MW1-08	9/19/2018	591.41	--	8.81	--	--	582.60	582.60
MW1-08	11/29/2018	591.41	--	6.88	--	--	584.53	584.53
MW2-08	4/24/2013	591.76	--	7.09	--	--	584.67	584.67
MW2-08	5/23/2013	591.76	--	8.23	--	--	583.53	583.53
MW2-08	6/20/2013	591.76	--	8.18	--	--	583.58	583.58
MW2-08	7/25/2013	591.76	--	6.70	--	--	585.06	585.06
MW2-08	8/29/2013	591.76	--	8.04	--	--	583.72	583.72
MW2-08	9/27/2013	591.76	--	8.58	--	--	583.18	583.18
MW2-08	10/22/2013	591.76	--	8.91	--	--	582.85	582.85
MW2-08	11/21/2013	591.76	--	9.17	--	--	582.59	582.59
MW2-08	12/11/2013	591.76	--	9.10	--	--	582.66	582.66
MW2-08	1/15/2014	591.76	--	7.56	--	--	584.20	584.20
MW2-08	2/26/2014	591.76	--	7.85	--	--	583.91	583.91
MW2-08	3/25/2014	591.76	(1)	(1)	(1)	(1)	(1)	(1)
MW2-08	5/5/2014	591.76	(1)	(1)	(1)	(1)	(1)	(1)
MW2-08	9/19/2014	591.76	--	7.80	--	--	583.96	583.96
MW2-08	12/11/2014	590.64	--	8.06	--	--	582.58	582.58
MW2-08	3/9/2015	590.64	--	8.72	--	--	581.92	581.92
MW2-08	6/1/2015	590.64	--	7.52	--	--	583.12	583.12
MW2-08	8/5/2015	590.64	--	8.47	--	--	582.17	582.17
MW2-08	1/8/2016	590.64	--	7.47	--	--	583.17	583.17
MW2-08	3/18/2016	590.64	--	6.32	--	--	584.32	584.32
MW2-08	5/26/2016	590.64	--	8.13	--	--	582.51	582.51
MW2-08	8/12/2016	590.64	--	9.04	--	--	581.60	581.60
MW2-08	12/9/2016	590.64	--	7.21	--	--	583.43	583.43
MW2-08	2/27/2017	590.64	--	7.38	--	--	583.26	583.26

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Well I.D.	Date	TOC Elevation (ft amsl)	DTP (ft BTOC)	DTW (ft BTOC)	LNAPL Thickness (ft)	Top of LNAPL Elevation (ft amsl)	Bottom of LNAPL/ Groundwater Elevation (ft amsl)	Corrected GW Elevation (ft amsl)
MW2-08	6/19/2017	590.64	--	8.27	--	--	582.37	582.37
MW2-08	9/13/2017	590.64	--	9.12	--	--	581.52	581.52
MW2-08	11/16/2017	590.64	--	9.27	--	--	581.37	581.37
MW2-08	3/22/2018	590.64	--	7.67	--	--	582.97	582.97
MW2-08	5/17/2018	590.64	--	6.34	--	--	584.30	584.30
MW2-08	9/19/2018	590.64	--	9.05	--	--	581.59	581.59
MW2-08	11/29/2018	590.64	--	1.32	--	--	589.32	589.32
MW3R-08	4/24/2013	589.11	4.90	4.90	trace	584.21	584.21	584.21
MW3R-08	5/23/2013	589.11	6.51	6.51	trace	582.60	582.60	582.60
MW3R-08	6/20/2013	589.11	--	5.60	--	--	583.51	583.51
MW3R-08	7/25/2013	589.11	--	4.71	trace	--	584.40	584.40
MW3R-08	8/29/2013	589.11	--	7.34	trace	--	581.77	581.77
MW3R-08	9/27/2013	589.11	--	7.83	--	--	581.28	581.28
MW3R-08	10/22/2013	589.11	--	8.50	trace	--	580.61	580.61
MW3R-08	11/21/2013	589.11	--	8.67	trace	--	580.44	580.44
MW3R-08	12/11/2013	589.11	--	8.44	trace	--	580.67	580.67
MW3R-08	1/15/2014	589.11	--	6.78	--	--	582.33	582.33
MW3R-08	2/26/2014	589.11	--	7.15	--	--	581.96	581.96
MW3R-08	3/25/2014	589.11	--	6.19	--	--	582.92	582.92
MW3R-08	5/5/2014	589.11	--	6.13	--	--	582.98	582.98
MW3R-08	9/19/2014	589.11	--	5.39	--	--	583.72	583.72
MW3R-08	12/11/2014	587.87	--	6.08	trace	--	581.79	581.79
MW3R-08	3/9/2015	587.87	--	6.37	--	--	581.50	581.50
MW3R-08	6/1/2015	587.87	--	5.10	--	--	582.77	582.77
MW3R-08	8/5/2015	587.87	--	6.15	--	--	581.72	581.72
MW3R-08	1/8/2016	587.87	--	5.65	--	--	582.22	582.22
MW3R-08	3/18/2016	587.87	--	5.22	--	--	582.65	582.65
MW3R-08	5/26/2016	587.87	--	5.87	--	--	582.00	582.00
MW3R-08	8/12/2016	587.87	--	7.19	--	--	580.68	580.68
MW3R-08	12/9/2016	587.87	--	5.61	--	--	582.26	582.26
MW3R-08	2/27/2017	587.87	--	5.20	--	--	582.67	582.67
MW3R-08	6/19/2017	587.87	--	5.90	--	--	581.97	581.97
MW3R-08	9/13/2017	587.87	--	6.60	--	--	581.27	581.27
MW3R-08	11/16/2017	587.87	--	6.50	--	--	581.37	581.37
MW3R-08	3/22/2018	587.87	--	5.51	--	--	582.36	582.36
MW3R-08	5/17/2018	587.87	--	3.14	--	--	584.73	584.73
MW3R-08	9/19/2018	587.87	--	7.24	--	--	580.63	580.63
MW3R-08	11/29/2018	587.87	--	4.44	--	--	583.43	583.43
MW4-08	4/24/2013	591.76	--	8.78	--	--	582.98	582.98
MW4-08	5/23/2013	591.76	--	8.71	--	--	583.05	583.05
MW4-08	6/20/2013	591.76	--	8.15	--	--	583.61	583.61
MW4-08	7/25/2013	591.76	--	7.47	trace	--	584.29	584.29
MW4-08	8/29/2013	591.76	--	9.97	--	--	581.79	581.79
MW4-08	9/27/2013	591.76	--	10.21	--	--	581.55	581.55
MW4-08	10/22/2013	591.76	--	10.35	--	--	581.41	581.41
MW4-08	11/21/2013	591.76	--	11.42	--	--	580.34	580.34
MW4-08	12/11/2013	591.76	--	11.00	--	--	580.76	580.76
MW4-08	1/15/2014	591.76	--	10.12	--	--	581.64	581.64
MW4-08	2/26/2014	591.76	--	9.94	--	--	581.82	581.82
MW4-08	3/25/2014	591.76	--	8.84	--	--	582.92	582.92
MW4-08	5/5/2014	591.76	--	8.80	--	--	582.96	582.96
MW4-08	9/19/2014	591.76	--	7.72	--	--	584.04	584.04
MW4-08	12/11/2014	590.35	--	8.81	--	--	581.54	581.54
MW4-08	3/9/2015	590.35	--	9.72	--	--	580.63	580.63
MW4-08	6/1/2015	590.35	--	8.41	--	--	581.94	581.94

Table 1

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MW4-08	8/5/2015	590.35	--	8.82	--	--	581.53	581.53
MW4-08	1/8/2016	590.35	--	8.75	--	--	581.60	581.60
MW4-08	3/18/2016	590.35	--	7.74	--	--	582.61	582.61
MW4-08	5/26/2016	590.35	--	8.05	--	--	582.30	582.30
MW4-08	8/12/2016	590.35	--	9.51	--	--	580.84	580.84
MW4-08	12/9/2016	590.35	--	8.29	--	--	582.06	582.06
MW4-08	2/27/2017	590.35	--	7.87	--	--	582.48	582.48
MW4-08	6/19/2017	590.35	--	7.75	--	--	582.60	582.60
MW4-08	9/13/2017	590.35	--	8.87	--	--	581.48	581.48
MW4-08	11/16/2017	590.35	--	9.00	--	--	581.35	581.35
MW4-08	3/22/2018	590.35	--	7.28	--	--	583.07	583.07
MW4-08	5/17/2018	590.35	--	5.36	--	--	584.99	584.99
MW4-08	9/19/2018	590.35	--	6.13	--	--	584.22	584.22
MW4-08	11/29/2018	590.35	(3)	(3)	(3)	(3)	(3)	(3)
MW5-08	4/24/2013	588.26	--	1.07	--	--	587.19	587.19
MW5-08	5/23/2013	588.26	--	3.51	--	--	584.75	584.75
MW5-08	6/20/2013	588.26	--	3.05	--	--	585.21	585.21
MW5-08	7/25/2013	588.26	--	0.15	--	--	588.11	588.11
MW5-08	8/29/2013	588.26	--	3.75	--	--	584.51	584.51
MW5-08	9/27/2013	588.26	--	4.04	--	--	584.22	584.22
MW5-08	10/22/2013	588.26	--	4.54	--	--	583.72	583.72
MW5-08	11/21/2013	588.26	--	3.61	--	--	584.65	584.65
MW5-08	12/11/2013	588.26	--	4.36	--	--	583.90	583.90
MW5-08	1/15/2014	588.26	--	0.73	--	--	587.53	587.53
MW5-08	2/26/2014	588.26	--	3.00	--	--	585.26	585.26
MW5-08	3/25/2014	588.26	--	2.50	--	--	585.76	585.76
MW5-08	5/5/2014	588.26	--	3.17	--	--	585.09	585.09
MW5-08	9/19/2014	588.26	--	2.71	--	--	585.55	585.55
MW5-08	12/11/2014	587.11	--	3.71	--	--	583.40	583.40
MW5-08	3/9/2015	587.11	--	0.58	--	--	586.53	586.53
MW5-08	6/1/2015	587.11	--	0.70	--	--	586.41	586.41
MW5-08	8/5/2015	587.11	--	3.22	--	--	583.89	583.89
MW5-08	1/8/2016	587.11	--	3.45	--	--	583.66	583.66
MW5-08	3/18/2016	587.11	--	2.69	--	--	584.42	584.42
MW5-08	5/26/2016	587.11	--	2.98	--	--	584.13	584.13
MW5-08	8/12/2016	587.11	--	4.65	--	--	582.46	582.46
MW5-08	12/9/2016	587.11	--	3.21	--	--	583.90	583.90
MW5-08	2/27/2017	587.11	--	2.94	--	--	584.17	584.17
MW5-08	6/19/2017	587.11	--	3.04	--	--	584.07	584.07
MW5-08	9/13/2017	587.11	--	4.12	--	--	582.99	582.99
MW5-08	11/16/2017	587.11	--	3.54	--	--	583.57	583.57
MW5-08	3/22/2018	587.11	--	2.78	--	--	584.33	584.33
MW5-08	5/17/2018	587.11	(1)	(1)	(1)	(1)	(1)	(1)
MW5-08	9/19/2018	587.11	--	4.40	--	--	582.71	582.71
MW5-08	11/29/2018	587.11	--	1.98	--	--	585.13	585.13
MW6-10	4/24/2013	592.71	8.42	11.64	3.22	584.29	581.07	583.97
MW6-10	5/23/2013	592.71	9.18	12.55	3.37	583.53	580.16	583.19
MW6-10	6/20/2013	592.71	8.63	12.27	3.64	584.08	580.44	583.71
MW6-10	7/25/2013	592.71	--	10.09	trace	--	582.62	582.62
MW6-10	8/29/2013	592.71	--	11.92	trace	--	580.79	580.79
MW6-10	9/27/2013	592.71	10.85	12.57	1.72	581.86	580.14	581.69
MW6-10	10/22/2013	592.71	10.89	12.76	1.87	581.82	579.95	581.63
MW6-10	11/21/2013	592.71	12.32	12.72	0.40	580.39	579.99	580.35
MW6-10	12/11/2013	592.71	12.14	12.15	0.01	580.57	580.56	580.57
MW6-10	1/15/2014	592.71	--	12.54	trace	--	580.17	580.17

Table 1

Hydraulic Measurements
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Dearborn, Michigan

Well I.D.	Date	TOC Elevation (ft amsl)	DTP (ft BTOC)	DTW (ft BTOC)	LNAPL Thickness (ft)	Top of LNAPL Elevation (ft amsl)	Bottom of LNAPL/ Groundwater Elevation (ft amsl)	Corrected GW Elevation (ft amsl)
MW6-10	2/26/2014	592.71	10.88	10.95	0.07	581.83	581.76	581.82
MW6-10	3/25/2014	592.71	(2)	(2)	0.33 (2)	(2)	(2)	(2)
MW6-10	5/5/2014	592.71	(2)	(2)	2.13 (2)	(2)	(2)	(2)
MW6-10	9/19/2014	592.71	(2)	(2)	3.65 (2)	(2)	(2)	(2)
MW6-10	12/11/2014	591.56	9.54	12.27	2.73	582.02	579.29	581.75
MW6-10	3/9/2015	591.56	10.60	12.61	2.01	580.96	578.95	580.76
MW6-10	6/1/2015	591.56	9.28	12.00	2.72	582.28	579.56	582.01
MW6-10	8/5/2015	591.56	9.29	12.40	3.11	582.27	579.16	581.96
MW6-10	1/8/2016	591.56	9.55	12.12	2.57	582.01	579.44	581.75
MW6-10	3/18/2016	591.56	8.60	11.87	3.27	582.96	579.69	582.63
MW6-10	5/26/2016	591.56	8.68	12.68	4.00	582.88	578.88	582.48
MW6-10	8/12/2016	591.56	10.24	13.00	2.76	581.32	578.56	581.04
MW6-10	12/9/2016	591.56	8.59	10.05	1.46	582.97	581.51	582.82
MW6-10	2/27/2017	591.56	8.56	12.01	3.45	583.00	579.55	582.65
MW6-10	6/19/2017	591.56	8.48	13.61	5.13	583.08	577.95	582.57
MW6-10	9/13/2017	591.56	9.75	12.15	2.40	581.81	579.41	581.57
MW6-10	11/16/2017	591.56	(1)	(1)	(1)	(1)	(1)	(1)
MW6-10	3/22/2018	591.56	(1)	(1)	(1)	(1)	(1)	(1)
MW6-10	5/17/2018	591.56	--	6.43	--	--	585.13	585.13
MW6-10	9/19/2018	591.56	10.04	11.63	1.59	581.52	579.93	581.36
MW6-10	11/29/2018	591.56	7.62	8.66	1.04	583.94	582.90	583.83
MW7-10	4/24/2013	592.21	8.25	10.42	2.17	583.96	581.79	583.75
MW7-10	5/23/2013	592.21	9.05	10.61	1.56	583.16	581.60	583.01
MW7-10	6/20/2013	592.21	8.39	10.55	2.16	583.82	581.66	583.61
MW7-10	7/25/2013	592.21	--	10.30	trace	--	581.91	581.91
MW7-10	8/29/2013	592.21	--	11.44	trace	--	580.77	580.77
MW7-10	9/27/2013	592.21	10.61	11.02	0.41	581.60	581.19	581.56
MW7-10	10/22/2013	592.21	10.77	11.15	0.38	581.44	581.06	581.41
MW7-10	11/21/2013	592.21	--	11.92	trace	--	580.29	580.29
MW7-10	12/11/2013	592.21	--	11.57	trace	--	580.64	580.64
MW7-10	1/15/2014	592.21	11.22	11.37	0.15	580.99	580.84	580.98
MW7-10	2/26/2014	592.21	10.38	10.41	0.03	581.83	581.80	581.83
MW7-10	3/25/2014	592.21	9.36	9.78	0.42	582.85	582.43	582.81
MW7-10	5/5/2014	592.21	9.14	10.14	1.00	583.07	582.07	582.97
MW7-10	9/19/2014	592.21	7.77	10.98	3.21	584.44	581.23	584.12
MW7-10	12/11/2014	591.01	9.00	10.98	1.98	582.01	580.03	581.81
MW7-10	3/9/2015	591.01	10.08	11.43	1.35	580.93	579.58	580.80
MW7-10	6/1/2015	591.01	8.78	10.40	1.62	582.23	580.61	582.07
MW7-10	8/5/2015	591.01	8.83	10.86	2.03	582.18	580.15	581.98
MW7-10	1/8/2016	591.01	9.06	10.41	1.35	581.95	580.60	581.82
MW7-10	3/18/2016	591.01	8.13	10.07	1.94	582.88	580.94	582.69
MW7-10	5/26/2016	591.01	8.21	11.35	3.14	582.80	579.66	582.49
MW7-10	8/12/2016	591.01	9.82	11.06	1.24	581.19	579.95	581.07
MW7-10	12/9/2016	591.01	9.02	12.07	3.05	581.99	578.94	581.69
MW7-10	2/27/2017	591.01	8.10	10.62	2.52	582.91	580.39	582.66
MW7-10	6/19/2017	591.01	8.22	11.35	3.13	582.79	579.66	582.48
MW7-10	9/13/2017	591.01	9.39	11.61	2.22	581.62	579.40	581.40
MW7-10	11/16/2017	591.01	9.65	12.71	3.06	581.36	578.30	581.05
MW7-10	3/22/2018	591.01	8.02	10.32	2.30	582.99	580.69	582.76
MW7-10	5/17/2018	591.01	5.76	10.03	4.27	585.25	580.98	584.82
MW7-10	9/19/2018	591.01	9.75	11.13	1.38	581.26	579.88	581.12
MW7-10	11/29/2018	591.01	7.15	10.36	3.21	583.86	580.65	583.54
MW8-10	4/24/2013	592.24	--	8.68	--	--	583.56	583.56
MW8-10	5/23/2013	592.24	--	9.39	--	--	582.85	582.85
MW8-10	6/20/2013	592.24	--	8.74	--	--	583.50	583.50

Table 1

Hydraulic Measurements
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Well I.D.	Date	TOC Elevation (ft amsl)	DTP (ft BTOC)	DTW (ft BTOC)	LNAPL Thickness (ft)	Top of LNAPL Elevation (ft amsl)	Bottom of LNAPL/ Groundwater Elevation (ft amsl)	Corrected GW Elevation (ft amsl)
MW8-10	7/25/2013	592.24	--	9.08	--	--	583.16	583.16
MW8-10	8/29/2013	592.24	--	11.13	--	--	581.11	581.11
MW8-10	9/27/2013	592.24	--	10.82	--	--	581.42	581.42
MW8-10	10/22/2013	592.24	--	11.00	--	--	581.24	581.24
MW8-10	11/21/2013	592.24	--	12.04	--	--	580.20	580.20
MW8-10	12/11/2013	592.24	--	11.67	--	--	580.57	580.57
MW8-10	1/15/2014	592.24	--	11.35	--	--	580.89	580.89
MW8-10	2/26/2014	592.24	--	10.54	--	--	581.70	581.70
MW8-10	3/25/2014	592.24	--	9.51	--	--	582.73	582.73
MW8-10	5/5/2014	592.24	--	9.33	--	--	582.91	582.91
MW8-10	9/19/2014	592.24	--	8.20	--	--	584.04	584.04
MW8-10	12/11/2014	591.18	--	9.27	--	--	581.91	581.91
MW8-10	3/9/2015	591.18	--	10.33	--	--	580.85	580.85
MW8-10	6/1/2015	591.18	--	9.10	--	--	582.08	582.08
MW8-10	8/5/2015	591.18	--	9.10	--	--	582.08	582.08
MW8-10	1/8/2016	591.18	--	9.01	--	--	582.17	582.17
MW8-10	3/18/2016	591.18	--	8.28	--	--	582.90	582.90
MW8-10	5/26/2016	591.18	--	8.54	--	--	582.64	582.64
MW8-10	8/12/2016	591.18	--	9.99	--	--	581.19	581.19
MW8-10	12/9/2016	591.18	--	8.90	--	--	582.28	582.28
MW8-10	2/27/2017	591.18	--	8.42	--	--	582.76	582.76
MW8-10	6/19/2017	591.18	--	8.33	--	--	582.85	582.85
MW8-10	9/13/2017	591.18	--	9.34	--	--	581.84	581.84
MW8-10	11/16/2017	591.18	--	9.56	--	--	581.62	581.62
MW8-10	3/22/2018	591.18	--	8.06	--	--	583.12	583.12
MW8-10	5/17/2018	591.18	--	6.00	--	--	585.18	585.18
MW8-10	9/19/2018	591.18	--	9.73	--	--	581.45	581.45
MW8-10	11/29/2018	591.18	--	7.35	--	--	583.83	583.83
MW9-10	4/24/2013	591.79	--	8.08	--	--	583.71	583.71
MW9-10	5/23/2013	591.79	--	9.20	--	--	582.59	582.59
MW9-10	6/20/2013	591.79	--	8.47	--	--	583.32	583.32
MW9-10	7/25/2013	591.79	--	7.78	--	--	584.01	584.01
MW9-10	8/29/2013	591.79	--	10.09	--	--	581.70	581.70
MW9-10	9/27/2013	591.79	--	10.52	--	--	581.27	581.27
MW9-10	10/22/2013	591.79	--	11.26	--	--	580.53	580.53
MW9-10	11/21/2013	591.79	--	11.35	--	--	580.44	580.44
MW9-10	12/11/2013	591.79	--	11.12	--	--	580.67	580.67
MW9-10	1/15/2014	591.79	--	9.92	--	--	581.87	581.87
MW9-10	2/26/2014	591.79	--	10.08	--	--	581.71	581.71
MW9-10	3/25/2014	591.79	--	9.15	--	--	582.64	582.64
MW9-10	5/5/2014	591.79	--	9.07	--	--	582.72	582.72
MW9-10	9/19/2014	591.79	--	8.09	--	--	583.70	583.70
MW9-10	12/11/2014	590.43	--	9.12	--	--	581.31	581.31
MW9-10	3/9/2015	590.43	--	9.94	--	--	580.49	580.49
MW9-10	6/1/2015	590.43	--	8.39	--	--	582.04	582.04
MW9-10	8/5/2015	590.43	--	8.87	--	--	581.56	581.56
MW9-10	1/8/2016	590.43	--	9.05	--	--	581.38	581.38
MW9-10	3/18/2016	590.43	--	8.11	--	--	582.32	582.32
MW9-10	5/26/2016	590.43	--	8.48	--	--	581.95	581.95
MW9-10	8/12/2016	590.43	--	9.81	--	--	580.62	580.62
MW9-10	12/9/2016	590.43	--	8.71	--	--	581.72	581.72
MW9-10	2/27/2017	590.43	--	8.24	--	--	582.19	582.19
MW9-10	6/19/2017	590.43	--	8.21	--	--	582.22	582.22
MW9-10	9/13/2017	590.43	--	9.22	--	--	581.21	581.21
MW9-10	11/16/2017	590.43	--	9.33	--	--	581.10	581.10

Table 1

Hydraulic Measurements
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Well I.D.	Date	TOC Elevation (ft amsl)	DTP (ft BTOC)	DTW (ft BTOC)	LNAPL Thickness (ft)	Top of LNAPL Elevation (ft amsl)	Bottom of LNAPL/ Groundwater Elevation (ft amsl)	Corrected GW Elevation (ft amsl)
MW9-10	3/22/2018	590.43	--	7.81	--	--	582.62	582.62
MW9-10	5/17/2018	590.43	--	5.77	--	--	584.66	584.66
MW9-10	9/19/2018	590.43	--	9.47	--	--	580.96	580.96
MW9-10	11/29/2018	590.43	--	7.09	--	--	583.34	583.34
MW10-10	4/24/2013	589.66	5.99	6.06	0.07	583.67	583.60	583.66
MW10-10	5/23/2013	589.66	7.10	8.04	0.94	582.56	581.62	582.47
MW10-10	6/20/2013	589.66	6.31	6.72	0.41	583.35	582.94	583.31
MW10-10	7/25/2013	589.66	5.62	6.24	0.62	584.04	583.42	583.98
MW10-10	8/29/2013	589.66	7.84	8.88	1.04	581.82	580.78	581.72
MW10-10	9/27/2013	589.66	8.42	8.47	0.05	581.24	581.19	581.23
MW10-10	10/22/2013	589.66	--	9.89	trace	--	579.77	579.77
MW10-10	11/21/2013	589.66	9.07	9.64	0.57	580.59	580.02	580.53
MW10-10	12/11/2013	589.66	8.98	9.45	0.47	580.68	580.21	580.63
MW10-10	1/15/2014	589.66	7.76	8.11	0.35	581.90	581.55	581.86
MW10-10	2/26/2014	589.66	(3)	(3)	(3)	(3)	(3)	(3)
MW10-10	3/25/2014	589.66	--	7.07	--	--	582.59	582.59
MW10-10	5/5/2014	589.66	--	7.01	--	--	582.65	582.65
MW10-10	9/19/2014	589.66	5.95	6.04	0.09	583.71	583.62	583.70
MW10-10	12/11/2014	588.52	7.03	7.15	0.12	581.49	581.37	581.48
MW10-10	3/9/2015	588.52	7.95	8.50	0.55	580.57	580.02	580.52
MW10-10	6/1/2015	588.52	6.03	6.12	0.09	582.49	582.40	582.48
MW10-10	8/5/2015	588.52	6.85	7.32	0.47	581.67	581.20	581.63
MW10-10	1/8/2016	588.52	6.98	6.98	0.00	581.54	581.54	581.54
MW10-10	3/18/2016	588.52	--	5.25	--	--	583.27	583.27
MW10-10	5/26/2016	588.52	6.39	6.49	0.10	582.13	582.03	582.12
MW10-10	8/12/2016	588.52	7.58	8.41	0.83	580.94	580.11	580.86
MW10-10	12/9/2016	588.52	6.63	6.91	0.28	581.89	581.61	581.86
MW10-10	2/27/2017	588.52	6.15	6.28	0.13	582.37	582.24	582.36
MW10-10	6/19/2017	588.52	6.10	6.79	0.69	582.42	581.73	582.35
MW10-10	9/13/2017	588.52	7.02	7.49	0.47	581.50	581.03	581.46
MW10-10	11/16/2017	588.52	7.00	7.46	0.46	581.52	581.06	581.48
MW10-10	3/22/2018	588.52	5.75	5.88	0.13	582.77	582.64	582.76
MW10-10	5/17/2018	588.52	2.60	2.61	0.01	585.92	585.91	585.92
MW10-10	9/19/2018	588.52	7.31	8.12	0.81	581.21	580.40	581.13
MW10-10	11/29/2018	588.52	--	3.55	--	--	584.97	584.97
MW11-12	4/24/2013	588.15	--	1.65	--	--	586.50	586.50
MW11-12	5/23/2013	588.15	--	2.13	--	--	586.02	586.02
MW11-12	6/20/2013	588.15	--	2.08	--	--	586.07	586.07
MW11-12	7/25/2013	588.15	--	0.72	--	--	587.43	587.43
MW11-12	8/29/2013	588.15	--	2.82	--	--	585.33	585.33
MW11-12	9/27/2013	588.15	--	2.98	--	--	585.17	585.17
MW11-12	10/22/2013	588.15	--	3.31	--	--	584.84	584.84
MW11-12	11/21/2013	588.15	--	2.22	--	--	585.93	585.93
MW11-12	12/11/2013	588.15	--	3.02	--	--	585.13	585.13
MW11-12	1/15/2014	588.15	--	1.32	--	--	586.83	586.83
MW11-12	2/26/2014	588.15	(3)	(3)	(3)	(3)	(3)	(3)
MW11-12	3/25/2014	588.15	--	1.19	--	--	586.96	586.96
MW11-12	5/5/2014	588.15	--	2.23	--	--	585.92	585.92
MW11-12	9/19/2014	588.15	--	1.75	--	--	586.40	586.40
MW11-12	12/11/2014	587.19	--	2.69	--	--	584.50	584.50
MW11-12	3/9/2015	587.19	(4)	(4)	(4)	(4)	(4)	(4)
MW11-12	6/1/2015	587.19	--	1.00	--	--	586.19	586.19
MW11-12	8/5/2015	587.19	--	1.62	--	--	585.57	585.57
MW11-12	1/8/2016	587.19	--	2.12	--	--	585.07	585.07
MW11-12	3/18/2016	587.19	--	0.93	--	--	586.26	586.26

Table 1

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Dearborn, Michigan

Well I.D.	Date	TOC Elevation (ft amsl)	DTP (ft BTOC)	DTW (ft BTOC)	LNAPL Thickness (ft)	Top of LNAPL Elevation (ft amsl)	Bottom of LNAPL/ Groundwater Elevation (ft amsl)	Corrected GW Elevation (ft amsl)
MW11-12	5/26/2016	587.19	--	1.02	--	--	586.17	586.17
MW11-12	8/12/2016	587.19	--	3.11	--	--	584.08	584.08
MW11-12	12/9/2016	587.19	--	2.12	--	--	585.07	585.07
MW11-12	2/27/2017	587.19	--	1.00	--	--	586.19	586.19
MW11-12	6/19/2017	587.19	--	1.58	--	--	585.61	585.61
MW11-12	9/13/2017	587.19	--	2.76	--	--	584.43	584.43
MW11-12	11/16/2017	587.19	--	2.15	--	--	585.04	585.04
MW11-12	3/22/2018	587.19	--	1.31	--	--	585.88	585.88
MW11-12	5/17/2018	587.19	(1)	(1)	(1)	(1)	(1)	(1)
MW11-12	9/19/2018	587.19	--	3.38	--	--	583.81	583.81
MW11-12	11/29/2018	587.19	--	0.50	--	--	586.69	586.69
MW13-12	4/24/2013	587.95	--	4.27	--	--	583.68	583.68
MW13-12	5/23/2013	587.95	--	5.21	--	--	582.74	582.74
MW13-12	6/20/2013	587.95	--	4.61	--	--	583.34	583.34
MW13-12	7/25/2013	587.95	--	3.82	--	--	584.13	584.13
MW13-12	8/29/2013	587.95	--	6.05	--	--	581.90	581.90
MW13-12	9/27/2013	587.95	--	6.66	--	--	581.29	581.29
MW13-12	10/22/2013	587.95	--	7.25	--	--	580.70	580.70
MW13-12	11/21/2013	587.95	--	7.31	--	--	580.64	580.64
MW13-12	12/11/2013	587.95	--	7.21	--	--	580.74	580.74
MW13-12	1/15/2014	587.95	--	5.91	--	--	582.04	582.04
MW13-12	2/26/2014	587.95	(3)	(3)	(3)	(3)	(3)	(3)
MW13-12	3/25/2014	587.95	--	5.33	--	--	582.62	582.62
MW13-12	5/5/2014	587.95	--	5.22	--	--	582.73	582.73
MW13-12	9/19/2014	587.95	--	4.14	--	--	583.81	583.81
MW13-12	12/11/2014	586.78	--	5.37	--	--	581.41	581.41
MW13-12	3/9/2015	586.78	--	6.33	--	--	580.45	580.45
MW13-12	6/1/2015	586.78	--	1.41	--	--	585.37	585.37
MW13-12	8/5/2015	586.78	--	3.05	--	--	583.73	583.73
MW13-12	1/8/2016	586.78	--	4.32	--	--	582.46	582.46
MW13-12	3/18/2016	586.78	--	1.10	--	--	585.68	585.68
MW13-12	5/26/2016	586.78	--	4.59	--	--	582.19	582.19
MW13-12	8/12/2016	586.78	--	5.92	--	--	580.86	580.86
MW13-12	12/9/2016	586.78	--	3.11	--	--	583.67	583.67
MW13-12	2/27/2017	586.78	--	1.85	--	--	584.93	584.93
MW13-12	6/19/2017	586.78	--	4.05	--	--	582.73	582.73
MW13-12	9/13/2017	586.78	--	5.31	--	--	581.47	581.47
MW13-12	11/16/2017	586.78	(5)	(5)	(5)	(5)	(5)	(5)
MW13-12	3/22/2018	586.78	--	3.62	--	--	583.16	583.16
MW13-12	5/17/2018	586.78	--	1.47	--	--	585.31	585.31
MW13-12	9/19/2018	586.78	--	5.45	--	--	581.33	581.33
MW13-12	11/29/2018	586.78	--	2.93	--	--	583.85	583.85
MW14-12	4/24/2013	588.11	--	4.42	--	--	583.69	583.69
MW14-12	5/23/2013	588.11	--	5.31	--	--	582.80	582.80
MW14-12	6/20/2013	588.11	--	4.76	--	--	583.35	583.35
MW14-12	7/25/2013	588.11	--	4.20	--	--	583.91	583.91
MW14-12	8/29/2013	588.11	--	6.16	--	--	581.95	581.95
MW14-12	9/27/2013	588.11	--	6.82	--	--	581.29	581.29
MW14-12	10/22/2013	588.11	--	7.33	--	--	580.78	580.78
MW14-12	11/21/2013	588.11	--	7.42	--	--	580.69	580.69
MW14-12	12/11/2013	588.11	--	7.39	--	--	580.72	580.72
MW14-12	1/15/2014	588.11	--	5.23	--	--	582.88	582.88
MW14-12	2/26/2014	588.11	(3)	(3)	(3)	(3)	(3)	(3)
MW14-12	3/25/2014	588.11	--	5.35	--	--	582.76	582.76
MW14-12	5/5/2014	588.11	--	5.22	--	--	582.89	582.89

Table 1

Hydraulic Measurements
Quarterly Progress Report #23 (October, November and December 2018)
Former Dearborn Refining Site
Dearborn, Michigan

Well I.D.	Date	TOC Elevation (ft amsl)	DTP (ft BTOC)	DTW (ft BTOC)	LNAPL Thickness (ft)	Top of LNAPL Elevation (ft amsl)	Bottom of LNAPL/ Groundwater Elevation (ft amsl)	Corrected GW Elevation (ft amsl)
MW14-12	9/19/2014	588.11	--	3.94	--	--	584.17	584.17
MW14-12	12/11/2014	586.81	--	5.32	--	--	581.49	581.49
MW14-12	3/9/2015	586.81	(4)	(4)	(4)	(4)	(4)	(4)
MW14-12	6/1/2015	586.81	--	4.35	--	--	582.46	582.46
MW14-12	8/5/2015	586.81	--	4.98	--	--	581.83	581.83
MW14-12	1/8/2016	586.81	--	4.67	--	--	582.14	582.14
MW14-12	3/18/2016	586.81	--	3.40	--	--	583.41	583.41
MW14-12	5/26/2016	586.81	--	3.90	--	--	582.91	582.91
MW14-12	8/12/2016	586.81	--	5.88	--	--	580.93	580.93
MW14-12	12/9/2016	586.81	--	4.78	--	--	582.03	582.03
MW14-12	2/27/2017	586.81	--	3.60	--	--	583.21	583.21
MW14-12	6/19/2017	586.81	--	3.58	--	--	583.23	583.23
MW14-12	9/13/2017	586.81	--	5.32	--	--	581.49	581.49
MW14-12	11/16/2017	586.81	--	5.45	--	--	581.36	581.36
MW14-12	3/22/2018	586.81	--	3.42	--	--	583.39	583.39
MW14-12	5/17/2018	586.81	--	2.11	--	--	584.70	584.70
MW14-12	9/19/2018	586.81	--	5.50	--	--	581.31	581.31
MW14-12	11/29/2018	586.81	(6)	(6)	(6)	(6)	(6)	(6)
MW15-12	4/24/2013	588.75	--	6.90	--	--	581.85	581.85
MW15-12	5/23/2013	588.75	--	3.87	--	--	584.88	584.88
MW15-12	6/20/2013	588.75	--	4.32	--	--	584.43	584.43
MW15-12	7/25/2013	588.75	--	3.71	--	--	585.04	585.04
MW15-12	8/29/2013	588.75	--	4.34	--	--	584.41	584.41
MW15-12	9/27/2013	588.75	--	5.26	--	--	583.49	583.49
MW15-12	10/22/2013	588.75	--	5.67	--	--	583.08	583.08
MW15-12	11/21/2013	588.75	--	6.17	--	--	582.58	582.58
MW15-12	12/11/2013	588.75	--	6.41	--	--	582.34	582.34
MW15-12	1/15/2014	588.75	--	5.98	--	--	582.77	582.77
MW15-12	2/26/2014	588.75	(3)	(3)	(3)	(3)	(3)	(3)
MW15-12	3/25/2014	588.75	--	5.48	--	--	583.27	583.27
MW15-12	5/5/2014	588.75	--	5.11	--	--	583.64	583.64
MW15-12	9/19/2014	588.75	--	3.97	--	--	584.78	584.78
MW15-12	12/11/2014	587.26	--	4.67	--	--	582.59	582.59
MW15-12	3/9/2015	587.26	(4)	(4)	(4)	(4)	(4)	(4)
MW15-12	6/1/2015	587.26	--	4.61	--	--	582.65	582.65
MW15-12	8/5/2015	587.26	--	4.60	--	--	582.66	582.66
MW15-12	1/8/2016	587.26	--	4.92	--	--	582.34	582.34
MW15-12	3/18/2016	587.26	--	3.98	--	--	583.28	583.28
MW15-12	5/26/2016	587.26	--	3.59	--	--	583.67	583.67
MW15-12	8/12/2016	587.26	--	5.10	--	--	582.16	582.16
MW15-12	12/9/2016	587.26	--	3.81	--	--	583.45	583.45
MW15-12	2/27/2017	587.26	--	3.55	--	--	583.71	583.71
MW15-12	6/19/2017	587.26	--	3.32	--	--	583.94	583.94
MW15-12	9/13/2017	587.26	--	4.47	--	--	582.79	582.79
MW15-12	11/16/2017	587.26	--	4.98	--	--	582.28	582.28
MW15-12	3/22/2018	587.26	--	3.33	--	--	583.93	583.93
MW15-12	5/17/2018	587.26	--	2.22	--	--	585.04	585.04
MW15-12	9/19/2018	587.26	--	4.44	--	--	582.82	582.82
MW15-12	11/29/2018	587.26	--	2.93	--	--	584.33	584.33
MW16-12	4/24/2013	587.87	--	2.57	--	--	585.30	585.30
MW16-12	5/23/2013	587.87	--	2.91	--	--	584.96	584.96
MW16-12	6/20/2013	587.87	--	2.39	--	--	585.48	585.48
MW16-12	7/25/2013	587.87	--	1.53	--	--	586.34	586.34
MW16-12	8/29/2013	587.87	--	2.41	--	--	585.46	585.46
MW16-12	9/27/2013	587.87	--	3.24	--	--	584.63	584.63

Table 1

Hydraulic Measurements
Quarterly Progress Report #23 (October, November and December 2018)
Former Dearborn Refining Site
Dearborn, Michigan

Well I.D.	Date	TOC Elevation (ft amsl)	DTP (ft BTOC)	DTW (ft BTOC)	LNAPL Thickness (ft)	Top of LNAPL Elevation (ft amsl)	Bottom of LNAPL/ Groundwater Elevation (ft amsl)	Corrected GW Elevation (ft amsl)
MW16-12	10/22/2013	587.87	--	3.78	--	--	584.09	584.09
MW16-12	11/21/2013	587.87	--	4.16	--	--	583.71	583.71
MW16-12	12/11/2013	587.87	--	4.20	--	--	583.67	583.67
MW16-12	1/15/2014	587.87	--	1.26	--	--	586.61	586.61
MW16-12	2/26/2014	587.87	--	3.27	--	--	584.60	584.60
MW16-12	3/25/2014	587.87	--	3.01	--	--	584.86	584.86
MW16-12	5/5/2014	587.87	--	2.53	--	--	585.34	585.34
MW16-12	9/19/2014	587.87	--	2.25	--	--	585.62	585.62
MW16-12	12/11/2014	586.67	--	2.70	--	--	583.97	583.97
MW16-12	3/9/2015	586.67	(4)	(4)	(4)	(4)	(4)	(4)
MW16-12	6/1/2015	586.67	--	1.91	--	--	584.76	584.76
MW16-12	8/5/2015	586.67	--	2.89	--	--	583.78	583.78
MW16-12	1/8/2016	586.67	--	4.43	--	--	582.24	582.24
MW16-12	3/18/2016	586.67	--	2.96	--	--	583.71	583.71
MW16-12	5/26/2016	586.67	--	2.53	--	--	584.14	584.14
MW16-12	8/12/2016	586.67	--	4.44	--	--	582.23	582.23
MW16-12	12/9/2016	586.67	--	2.67	--	--	584.00	584.00
MW16-12	2/27/2017	586.67	--	1.84	--	--	584.83	584.83
MW16-12	6/19/2017	586.67	--	1.81	--	--	584.86	584.86
MW16-12	9/13/2017	586.67	--	4.12	--	--	582.55	582.55
MW16-12	11/16/2017	586.67	--	5.09	--	--	581.58	581.58
MW16-12	3/22/2018	586.67	--	2.52	--	--	584.15	584.15
MW16-12	5/17/2018	586.67	--	1.57	--	--	585.10	585.10
MW16-12	9/19/2018	586.67	--	4.56	--	--	582.11	582.11
MW16-12	11/29/2018	586.67	--	2.00	--	--	584.67	584.67
TW-1	4/24/2013	592.43	--	8.53	--	--	583.90	583.90
TW-1	5/23/2013	592.43	9.35	9.35	trace	583.08	583.08	583.08
TW-1	6/20/2013	592.43	8.85	8.85	trace	583.58	583.58	583.58
TW-1	7/25/2013	592.43	8.77	8.81	0.04	583.66	583.62	583.66
TW-1	8/29/2013	592.43	--	11.43	--	--	581.00	581.00
TW-1	9/27/2013	592.43	10.84	10.87	0.03	581.59	581.56	581.59
TW-1	10/22/2013	592.43	10.93	10.98	0.05	581.50	581.45	581.50
TW-1	11/21/2013	592.43	--	12.20	--	--	580.23	580.23
TW-1	12/11/2013	592.43	--	11.91	trace	--	580.52	580.52
TW-1	1/15/2014	592.43	--	11.86	trace	--	580.57	580.57
TW-1	2/26/2014	592.43	--	10.67	trace	--	581.76	581.76
TW-1	3/25/2014	592.43	(2)	(2)	trace (2)	(2)	(2)	(2)
TW-1	5/5/2014	592.43	(2)	(2)	trace (2)	(2)	(2)	(2)
TW-1	9/19/2014	592.43	--	8.28	trace	--	584.15	584.15
TW-1	12/11/2014	591.22	--	9.41	trace	--	581.81	581.81
TW-1	3/9/2015	591.22	10.38	10.39	0.01	580.84	580.83	580.84
TW-1	6/1/2015	591.22	9.13	9.14	0.01	582.09	582.08	582.09
TW-1	8/5/2015	591.22	9.20	9.21	0.01	582.02	582.01	582.02
TW-1	1/8/2016	591.22	9.36	9.36	0.00	581.86	581.86	581.86
TW-1	3/18/2016	591.22	8.45	8.46	0.01	582.77	582.76	582.77
TW-1	5/26/2016	591.22	8.65	8.67	0.02	582.57	582.55	582.57
TW-1	8/12/2016	591.22	10.11	10.11	0.00	581.11	581.11	581.11
TW-1	12/9/2016	591.22	--	8.82	trace	--	582.40	582.40
TW-1	2/27/2017	591.22	8.47	8.50	0.03	582.75	582.72	582.75
TW-1	6/19/2017	591.22	8.39	8.44	0.05	582.83	582.78	582.82
TW-1	9/13/2017	591.22	9.46	9.54	0.08	581.76	581.68	581.75
TW-1	11/16/2017	591.22	9.70	9.75	0.05	581.52	581.47	581.51
TW-1	3/22/2018	591.22	7.38	8.00	0.62	583.84	583.22	583.78
TW-1	5/17/2018	591.22	6.05	6.20	0.15	585.17	585.02	585.15
TW-1	9/19/2018	591.22	9.70	14.54	4.84	581.52	576.68	581.04

Table 1

Hydraulic Measurements
Quarterly Progress Report #23 (October, November and December 2018)
Former Dearborn Refining Site
Dearborn, Michigan

Well I.D.	Date	TOC Elevation (ft amsl)	DTP (ft BTOC)	DTW (ft BTOC)	LNAPL Thickness (ft)	Top of LNAPL Elevation (ft amsl)	Bottom of LNAPL/ Groundwater Elevation (ft amsl)	Corrected GW Elevation (ft amsl)
TW-1 ⁽⁷⁾	11/29/2018	591.22	7.23	7.38	0.15	583.99	583.84	583.97
TW-2	4/24/2013	592.20	7.87	8.36	0.49	584.33	583.84	584.28
TW-2	5/23/2013	592.20	9.36	9.65	0.29	582.84	582.55	582.81
TW-2	6/20/2013	592.20	8.56	9.01	0.45	583.64	583.19	583.59
TW-2	7/25/2013	592.20	--	11.80	trace	--	580.40	580.40
TW-2	8/29/2013	592.20	--	10.36	--	--	581.84	581.84
TW-2	9/27/2013	592.20	10.79	10.83	0.04	581.41	581.37	581.40
TW-2	10/22/2013	592.20	10.95	11.01	0.06	581.25	581.19	581.24
TW-2	11/21/2013	592.20	--	11.67	trace	--	580.53	580.53
TW-2	12/11/2013	592.20	11.35	11.44	0.09	580.85	580.76	580.84
TW-2	1/15/2014	592.20	10.23	10.28	0.05	581.97	581.92	581.96
TW-2	2/26/2014	592.20	10.38	10.39	0.01	581.82	581.81	581.82
TW-2	3/25/2014	592.20	9.43	9.44	0.01	582.77	582.76	582.77
TW-2	5/5/2014	592.20	9.32	9.53	0.21	582.88	582.67	582.86
TW-2	9/19/2014	592.20	8.18	9.01	0.83	584.02	583.19	583.93
TW-2	12/11/2014	590.92	9.30	9.91	0.61	581.62	581.01	581.56
TW-2	3/9/2015	590.92	10.20	10.67	0.47	580.72	580.25	580.67
TW-2	6/1/2015	590.92	8.66	8.90	0.24	582.26	582.02	582.23
TW-2	8/5/2015	590.92	9.07	9.38	0.31	581.85	581.54	581.82
TW-2	1/8/2016	590.92	9.28	9.28	0.00	581.64	581.64	581.64
TW-2	3/18/2016	590.92	8.15	8.17	0.02	582.77	582.75	582.77
TW-2	5/26/2016	590.92	8.59	8.62	0.03	582.33	582.30	582.32
TW-2	8/12/2016	590.92	9.99	10.41	0.42	580.93	580.51	580.89
TW-2	12/9/2016	590.92	8.88	8.89	0.01	582.04	582.03	582.04
TW-2	2/27/2017	590.92	8.21	8.39	0.18	582.71	582.53	582.69
TW-2	6/19/2017	590.92	8.32	8.50	0.18	582.60	582.42	582.58
TW-2	9/13/2017	590.92	9.33	9.90	0.57	581.59	581.02	581.53
TW-2	11/16/2017	590.92	9.50	9.66	0.16	581.42	581.26	581.40
TW-2	3/22/2018	590.92	7.60	7.89	0.29	583.32	583.03	583.29
TW-2	5/17/2018	590.92	5.85	6.14	0.29	585.07	584.78	585.04
TW-2	9/19/2018	590.92	9.61	9.93	0.32	581.31	580.99	581.28
TW-2	11/29/2018	590.92	(3)	(3)	(3)	(3)	(3)	(3)

Notes:

- Not present
- BTOC Below top of casing
- DTP Depth to product
- DTW Depth to water
- ft Feet
- ft amsl Feet above mean sea level
- GW Groundwater
- LNAPL Light Non-Aqueous Phase Liquid
- TOC Top of casing
- trace Trace LNAPL present on oil/water interface probe
- (1) Damaged Well
- (2) The measuring point elevation (top of casing) needs to be re-verified
- (3) Unable to access due to snow and ice
- (4) Unable to measure level - area flooded
- (5) Full with water
- (6) Unable to access due to obstructing object
- (7) Depth to water measured from ground surface. Stick up length was added

Table 2

LNAPL Thickness (Feet) Observations
Quarterly Progress Report #23 (October, November and December 2018)
Former Dearborn Refining Site
Dearborn, Michigan

Well ID	EX-1	EX-2	EX-3	EX-4	EX-5	EX-6	EX-7	EX-8	EX-9	EX-10	EX-11	EX-12	EX-13	EX-14	EX-15	EX-16	EX-17	EX-18	EX-19	EX-20	EX-21	EX-22	EX-23	EX-24	EX-25	EX-26	EX-27	EX-28
April 24, 2013	--	--	0.03	--	--	--	--	0.02	--	--	0.01	--	--	--	--	--	--	--	--	--	--	0.01	--	0.01	--	--	--	
May 23, 2013	--	--	0.17	--	0.04	--	--	--	0.24	--	0.31	0.78	--	--	--	0.09	--	--	--	--	0.16	0.36	0.03	1.52	--	0.50	--	--
June 20, 2013	--	--	0.12	--	trace	--	--	--	0.19	--	0.34	0.38	--	--	--	0.08	--	--	--	--	0.15	0.64	0.03	1.90	--	0.44	trace	0.06
July 25, 2013	--	--	0.15	trace	trace	--	--	--	--	0.57	--	--	--	--	--	0.15	trace	--	--	--	0.06	--	--	--	0.42	--	0.17	
August 29, 2013	--	--	0.13	0.06	3.99	--	--	--	0.59	--	--	--	--	--	--	0.03	0.10	0.03	--	--	0.38	--	0.50	0.48	--	0.46	--	trace
September 27, 2013	--	--	0.23	0.17	--	--	--	--	0.39	0.16	0.13	1.60	--	--	--	0.22	0.14	--	--	--	0.11	0.08	0.30	0.69	--	0.52	0.31	0.12
October 22, 2013	--	--	0.24	0.23	0.52	--	--	--	0.50	0.22	0.34	1.97	--	--	--	0.28	0.14	--	--	--	0.19	0.08	0.50	1.07	--	0.65	0.66	0.11
November 21, 2013	--	--	0.19	0.10	0.00	--	--	--	0.10	0.12	--	0.02	--	--	--	0.05	0.01	--	--	--	0.03	0.20	0.09	2.35	--	0.19	0.04	0.16
December 11, 2013	--	--	0.03	--	--	--	--	--	0.01	--	0.01	--	--	--	--	--	trace	--	--	--	trace	0.11	0.02	1.02	--	0.64	--	0.12
January 15, 2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	trace	--	--	--	--	--	0.03	0.01	0.38	--	--	--	0.11
February 26, 2014	--	--	--	0.02	--	--	--	--	--	--	0.51	--	--	--	--	--	--	--	--	--	0.01	0.05	0.13	--	trace	0.07	0.11	
March 25, 2014	--	--	--	--	--	--	--	--	--	--	0.50	--	--	--	--	--	--	--	--	--	--	0.03	0.42	--	--	--	--	--
May 5, 2014	--	--	trace	trace	0.01	--	--	--	0.01	--	trace	0.35	--	--	--	0.02	--	--	--	--	--	0.09	0.01	0.97	--	trace	--	0.01
September 19, 2014	--	--	0.06	trace	0.01	--	--	--	0.02	0.02	trace	0.26	--	--	--	0.42	trace	--	--	--	0.01	1.75	0.02	2.34	--	0.86	0.01	0.22
December 11, 2014	--	--	0.28	0.04	trace	--	--	--	0.06	0.16	0.67	2.57	--	--	--	0.63	--	--	--	--	0.15	0.46	0.46	1.10	--	0.53	0.08	0.37
March 9, 2015	--	--	0.39	0.30	0.04	--	--	--	0.20	0.28	1.30	1.90	--	--	--	0.42	--	--	--	--	0.15	0.37	0.56	0.96	--	0.68	0.20	0.22
June 1, 2015	--	--	0.02	0.02	trace	--	--	--	0.02	trace	1.23	2.20	--	--	--	0.34	--	--	--	--	0.07	0.09	0.32	0.97	--	0.03	--	0.03
August 5, 2015	--	--	trace	0.07	trace	0.02	--	--	0.02	0.12	1.75	2.56	--	--	--	0.84	--	--	--	--	0.02	trace	0.01	1.40	--	0.59	0.02	0.20
January 8, 2016	--	--	trace	0.22	trace	0.11	--	--	0.07	0.01	1.83	1.44	--	--	--	0.22	--	--	--	--	0.13	trace	0.30	1.11	--	0.25	0.17	0.05
March 18, 2016	--	--	0.21	0.13	0.01	0.12	--	--	0.13	--	1.75	0.08	--	--	--	0.26	trace	--	--	--	0.04	0.11	0.13	1.61	--	0.38	--	0.01
May 26, 2016	--	--	0.23	0.15	0.01	0.07	--	--	0.11	0.01	2.17	0.62	--	--	--	0.18	0.01	--	--	--	0.09	0.19	0.14	1.96	--	0.74	0.31	0.02
August 12, 2016	--	--	0.30	0.15	0.10	0.07	--	--	0.18	0.25	3.28	1.26	--	--	--	0.57	trace	--	--	--	trace	0.46	1.11	1.36	--	0.95	0.54	trace
December 9, 2016	--	--	trace	0.19	0.13	0.01	--	--	0.14	0.01	2.57	1.32	--	--	--	0.44	trace	trace	--	--	0.25	0.75	0.43	1.47	--	0.67	0.42	0.07
February 27, 2017	--	--	0.59	0.17	0.06	0.05	--	--	0.09	--	2.43	1.06	--	--	--	0.55	0.01	trace	--	--	0.08	0.58	0.38	1.89	--	0.10	0.31	0.20
June 19, 2017	--	--	0.63	0.18	0.07	0.01	--	--	0.31	0.07	3.36	1.75	--	--	--	0.37	0.01	0.15	--	--	0.13	0.81	0.43	1.82	--	1.11	0.70	0.17
September 13, 2017	--	--	0.57	0.55	0.31	0.03	NM	--	0.11	0.19	3.22	3.02	--	--	--	0.59	0.59	0.15	--	--	0.28	0.38	1.58	1.62	--	0.61	1.00	0.70
November 16, 2017	--	--	0.38	0.60	0.37	0.01	--	--	0.10	0.04	3.00	2.26	--	--	--	0.37	0.52	0.02	--	--	0.32	0.11	0.95	1.20	--	0.39	0.56	0.36
March 22, 2018	--	--	0.38	0.58	0.05	0.01	--	--	0.10	0.04	1.08	1.46	--	--	--	0.21	0.38	0.11	--	--	0.09	0.17	0.27	1.46	--	0.29	0.20	0.10
May 17, 2018	--	--	0.45	0.27	0.01	--	--	--	0.09	0.01	4.84	1.02	--	--	--	0.16	0.39	0.01	--	--	0.12	0.19	0.34	1.67	--	0.22	0.29	0.17
September 19, 2018	--	--	0.24	1.72	0.41	0.02	--	--	0.21	0.07	3.98	3.07	--	--	--	0.48	8.98	0.69	--	--	0.38	0.50	1.43	1.32	--	0.76	1.68	0.72
November 29, 2018	--	--	0.39	0.66	0.04	--	--	--	0.20	0.01	3.52	1.18	--	--	--	0.38	0.61	0.01	--	--	0.16	0.30	0.34	1.24	--	0.29	0.24	0.38

Notes:

LNAPL Light Non-Aqueous Phase Liquid

-- LNAPL not present

trace Trace LNAPL present on oil/water interface probe

NM Not measured

(1) Well damaged just below ground surface. Unable to collect levels.

(2) Unable to measure level - area flooded.

(3) Water present. Unable to collect accurate reading.

Table 2

LNAPL Thickness (Feet) Observations
Quarterly Progress Report #23 (October, November and December 2018)
Former Dearborn Refining Site
Dearborn, Michigan

Well ID	EX-29	EX-30	EX-31	EX-32	EX-33	EX-34	EX-35	EX-36	MW1-08	MW2-08	MW3R-08	MW4-08	MW5-08	MW6-10	MW7-10	MW8-10	MW9-10	MW10-10	MW11-12	MW13-12	MW14-12	MW15-12	MW16-12	TW-1	TW-2	
April 24, 2013	0.29	--	0.01	0.13	--	--	--	--	trace	--	--	3.22	2.17	--	--	0.07	--	--	--	--	--	--	--	--	0.49	
May 23, 2013	--	--	0.03	--	--	--	--	--	trace	--	--	3.37	1.56	--	--	0.94	--	--	--	--	--	--	--	trace	0.29	
June 20, 2013	0.09	--	--	0.12	--	--	trace	--	--	--	--	3.64	2.16	--	--	0.41	--	--	--	--	--	--	--	trace	0.45	
July 25, 2013	0.03	--	trace	--	trace	--	--	0.01	--	--	trace	trace	--	trace	trace	--	--	0.62	--	--	--	--	--	0.04	trace	
August 29, 2013	0.46	--	0.07	10.85	0.64	--	0.64	0.73	--	--	trace	--	--	trace	trace	--	--	1.04	--	--	--	--	--	--	--	
September 27, 2013	0.62	--	0.17	--	--	--	trace	0.01	--	--	--	--	1.72	0.41	--	--	0.05	--	--	--	--	--	--	0.03	0.04	
October 22, 2013	1.01	--	0.25	--	--	--	--	--	--	trace	--	--	1.87	0.38	--	--	trace	--	--	--	--	--	--	0.05	0.06	
November 21, 2013	0.22	--	0.03	0.14	0.01	--	0.08	0.36	--	--	trace	--	--	0.40	trace	--	--	0.57	--	--	--	--	--	--	trace	
December 11, 2013	0.03	--	trace	0.12	--	--	0.02	0.17	--	--	trace	--	--	0.01	trace	--	--	0.47	--	--	--	--	--	--	trace	0.09
January 15, 2014	0.02	--	--	0.01	--	--	trace	0.28	--	--	--	--	trace	0.15	--	--	0.35	--	--	--	--	--	--	trace	0.05	
February 26, 2014	0.06	--	--	0.05	--	--	0.01	0.02	--	--	--	--	0.07	0.03	--	--	--	--	--	--	--	--	--	trace	0.01	
March 25, 2014	trace	--	--	0.03	--	--	0.02	0.02	--	--	--	--	0.33	0.42	--	--	--	--	--	--	--	--	--	trace	0.01	
May 5, 2014	0.05	trace	0.04	--	--	--	0.06	0.04	--	(1)	--	--	2.13	1	--	--	--	--	--	--	--	--	--	trace	0.21	
September 19, 2014	trace	--	--	trace	trace	--	0.07	0.63	--	--	--	--	3.65	3.21	--	--	0.09	--	--	--	--	--	--	trace	0.83	
December 11, 2014	0.15	--	--	0.37	0.01	--	0.12	0.43	--	--	trace	--	--	2.73	1.98	--	--	0.12	--	--	--	--	--	--	trace	0.61
March 9, 2015	0.27	--	0.12	0.23	trace	--	0.41	0.46	--	--	--	--	2.01	1.35	--	--	0.55	(2)	--	(2)	(2)	(2)	0.01	0.47		
June 1, 2015	0.16	--	--	0.09	--	--	0.31	0.52	--	--	--	--	2.72	1.62	--	--	0.09	--	--	--	--	--	--	0.01	0.24	
August 5, 2015	0.33	--	--	0.06	trace	--	0.29	0.71	--	--	--	--	3.11	2.03	--	--	0.47	--	--	--	--	--	--	0.01	0.31	
January 8, 2016	0.31	--	0.07	0.16	trace	--	0.32	0.52	--	--	--	--	2.57	1.35	--	--	trace	--	--	--	--	--	--	0.01	trace	
March 18, 2016	0.31	--	0.04	0.35	0.01	--	0.45	0.5	--	--	--	--	3.27	1.94	--	--	--	--	--	--	--	--	--	0.01	0.02	
May 26, 2016	0.36	--	0.01	0.46	0.22	--	0.02	0.52	--	--	--	--	4	3.14	--	--	0.1	--	--	--	--	--	--	0.02	0.03	
August 12, 2016	0.35	--	0.01	0.01	0.28	--	0.63	0.1	--	--	--	--	2.76	1.24	--	--	0.83	--	--	--	--	--	--	trace	0.42	
December 9, 2016	0.58	--	trace	0.61	0.14	--	0.32	0.77	--	--	--	--	1.46	3.05	--	--	0.28	--	--	--	--	--	--	trace	0.01	
February 27, 2017	0.43	--	trace	0.61	trace	--	0.32	0.77	--	--	--	--	3.45	2.52	--	--	0.13	--	--	--	--	--	--	0.03	0.18	
June 19, 2017	0.54	--	trace	0.48	1.24	--	0.32	0.77	--	--	--	--	5.13	3.13	--	--	0.69	--	--	--	--	--	--	0.05	0.18	
September 13, 2017	0.67	--	0.2	0.47	1.04	--	0.42	0.71	--	--	--	--	2.4	2.22	--	--	0.47	--	--	--	--	--	--	0.08	0.57	
November 16, 2017	0.66	--	0.06	0.5	0.39	--	0.4	0.55	--	--	--	--	(1)	3.06	--	--	0.46	--	(3)	--	--	--	--	--	0.05	0.16
March 22, 2018	0.7	--	0.03	0.53	0.34	--	0.34	0.47	--	--	--	--	(1)	2.3	--	--	0.13	--	--	--	--	--	--	0.62	0.29	
May 17, 2018	0.27	--	--	0.33	0.49	--	0.44	0.41	--	--	--	--	--	4.27	--	--	0.01	--	--	--	--	--	--	0.15	0.29	
September 19, 2018	0.76	--	0.01	1.74	0.68	--	0.53	0.56	--	--	--	--	1.59	1.38	--	--	0.81	--	--	--	--	--	--	4.84	0.32	
November 29, 2018	0.62	--	--	0.9	0.61	--	0.46	0.7	--	--	--	(4)	--	1.04	3.21	--	--	--	--	(5)	--	--	0.15	(4)		

Notes:

LNAPL Light Non-Aqueous Phase Liquid

-- LNAPL not present

trace Trace LNAPL present on oil/water interface probe

NM Not measured

(1) Well damaged just below ground surface. Unable to collect levels.

(2) Unable to measure level - area flooded.

(3) Water present. Unable to collect accurate reading.

(4) Unable to access due to snow and ice

(5) Unable to access due to obstructing object

Table 3

Pressure Measurements
Quarterly Progress Report #23 (October, November and December 2018)
Former Dearborn Refining Site
Dearborn, Michigan

Gas Probe ID	GP1-12 (inches H ₂ O)	GP2-12 (inches H ₂ O)	GP3-12 (inches H ₂ O)	GP4-12 (inches H ₂ O)	GP5-12 (inches H ₂ O)	GP6-12 (inches H ₂ O)	GP7-12 (inches H ₂ O)	GP8-12 (inches H ₂ O)
4/24/2013	-10.38	0.00	0.00	-0.59	15.10	-41.00	0.68	0.44
5/23/2013	-0.50	0.00	0.00	-0.14	0.96	-1.39	0.00	-9.50
6/20/2013	-0.13	0.00	0.00	0.82	13.70	0.00	0.50	0.00
7/25/2013	0.00	0.00	0.00	-4.29	2.68	-0.94	0.00	0.00
8/29/2013	0.00	0.00	0.00	0.00	3.13	-5.10	0.00	0.11
9/27/2013	0.00	0.00	0.00	-0.52	0.00	1.69	0.00	-5.63
10/22/2013	0.00	0.00	0.00	-0.19	0.00	-8.56	0.00	0.00
11/20/2013	0.00	0.00	0.00	0.00	0.00	-0.47	0.00	0.00
12/11/2013	0.00	0.00	0.00	-5.60	0.00	0.00	0.00	-5.60
1/15/2014	-0.19	(1)	0.00	-0.61	-3.42	(2)	6.10	0.38
2/26/2014	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
3/24/2014	17.70	0.00	0.85	-4.54	-3.26	(3)	-5.75	0.00
5/5/2014	-3.53	0.00	0.00	-2.23	-3.01	-5.78	0.63	-0.48
8/15/2014	0.51	0.00	-0.66	-0.21	-2.83	-3.33	-1.02	0.00
9/19/2014	0.00	0.00	0.14	-1.72	-0.82	-1.09	-0.67	0.00
12/11/2014	0.00	4.45	-1.82	-6.18	0.00	-2.60	0.00	-4.46
3/9/2015	-0.02	0.00	-1.25	-3.8 ⁽⁴⁾	-2.00	0.00	0.11	-2.00
6/1/2015	-0.09	0.00	0.00	0.44	-3.30	-5.71	0.50	0.18
8/5/2015	0.00	0.00	0.00	0.00	0.00	-0.32	0.00	-0.50
11/30/2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.04
1/8/2016	0.00	0.00	-0.22	-0.33	0.26	-2.78	0.00	2.20
3/18/2016	0.01	-0.02	-0.43	-0.42	-0.05	-2.00	0.00	0.12
5/26/2016	0.00	0.00	-0.34	-0.26	0.00	-8.15	0.00	-0.77
8/12/2016	0.00	0.00	0.33	0.25	0.00	0.02	0.00	-0.21
12/9/2016	0.00	0.00	-0.44	-0.16	0.00	-2.38	0.00	-6.66
2/27/2017	0.00	0.00	-3.40	0.00	-1.74	4.24	0.00	-0.15
6/19/2017	-0.05	0.01	0.14	-0.19	-1.50	-1.37	0.02	-0.32
9/13/2017	0.00	0.00	0.90	0.00	0.00	0.00	0.00	0.00
11/16/2017	0.01	0.01	0.01	0.01	0.00	-0.02	-0.01	0.01
3/22/2018	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00
5/17/2018	0.03	0.01	0.00	0.01	0.00	--	0.02	0.01
9/17/2018	0.01	0.00	0.03	-0.01	-0.01	0.01	0.00	-0.05
9/19/2018	0.00	0.00	0.38	0.00	0.00	0.00	-0.04	(3)
11/29/2018	0.00	0.00	1.70	0.38	0.04	(3)	(5)	1.98

Notes:

Pressure measurements in inches of water column (H₂O)

Pressure measurements collected using a digital manometer

(1) Unable to locate due to snow and ice

(2) Unable to access due to ice

(3) Flooded - unable to collect reading

(4) Valve was open before collecting reading

(5) Water present. Unable to collect accurate reading.

Table 4

Methane Monitoring
Quarterly Progress Report #23 (October, November and December 2018)
Former Dearborn Refining Site
Dearborn, Michigan

Location ID	4/26/2013				4/29/2013				5/7/2013				6/5/2013				8/30/2013				9/26/2013				10/23/2013				11/20/2013				12/16/2013				1/16/2014				2/26/2014			
	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time								
	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)																																				
GP1-12	0.0	2.2	17.2	3	nm	nm	nm	nm	0.1	9.1	0.2	2	0.0	3.3	16.3	2	0.0	8.0	0.3	2	0.0	8.2	3.8	2	0.0	0.7	19.8	2	0.0	1.0	19.8	2	nm	nm	nm	nm	nm	nm	nm	nm				
GP2-12	0.0	1.9	16.2	3	nm	nm	nm	nm	0.0	5.0	5.2	2	0.0	0.6	10.4	2	0.0	6.3	12.9	2	0.0	3.6	16.0	2	0.0	0.3	14.7	2	nm	nm	nm	nm	nm	nm	nm	nm								
GP3-12	0.0	0.0	20.7	3	nm	nm	nm	nm	0.0	7.9	1.9	2	0.0	13.4	1.6	2	0.0	13.1	1.2	2	0.0	11.5	2.4	2	0.0	0.8	3.9	2	0.0	0.6	6.1	2	nm	nm	nm	nm	nm	nm	nm	nm				
GP4-12	screen flooded				nm	nm	nm	nm	0.0	0.8	17.0	2	0.0	10.2	8.0	2	0.0	9.7	6.7	2	0.0	6.2	13.5	2	0.0	0.0	20.7	2	0.0	0.0	20.1	2	nm	nm	nm	nm	nm	nm	nm	nm				
GP5-12	screen flooded				nm	nm	nm	nm	0.0	0.9	16.3	2	0.0	3.0	14.9	2	0.0	7.2	2.6	2	0.0	7.3	4.2	2	0.0	2.6	15.4	2	0.0	0.4	17.0	2	0.0	1.2	19.2	2	nm	nm	nm	nm	nm	nm	nm	nm
GP6-12	screen flooded				nm	nm	nm	nm	8.3	4.5	0.1	2	nm				nm																											
GP7-12	screen flooded				nm	nm	nm	nm	0.0	7.7	1.4	2	0.0	11.4	8.8	2	0.0	11.3	0.2	2	0.0	12.2	3.0	2	0.3	1.2	16.8	2	0.0	5.4	13.7	2	0.1	3.4	4.6	2	nm	nm	nm	nm	nm	nm	nm	nm
GP8-12	0.0	0.0	20.9	3	nm	nm	nm	nm	0.0	1.7	17.7	2	0.0	0.0	20.0	2	0.0	1.8	16.0	2	0.0	0.1	20.4	4	0.0	8.9	11.1	4	0.0	0.6	5.2	2	0.0	6.0	4.4	2	nm	nm	nm	nm	nm	nm	nm	nm
MPE Exhaust	<0.1	0.0	20.8	3	nm	nm	nm	nm	nm				nm																															
EX-1	nm				0.0	3.7	4.5	2	nm	0.0	6.4	2.7	2	0.0	5.9	8.5	2	0.0	10.6	0.4	2	0.0	5.8	7.0	2	0.0	2.8	17.5	2	0.0	3.8	13.8	2	0.0	4.8	6.0	2	0.0	7.4	1.4	2			
EX-2	nm				0.0	0.3	17.8	2	nm	0.0	2.7	11.6	2	0.0	0.1	20.2	2	0.0	9.9	0.1	2	0.0	6.2	4.6	2	0.0	9.7	3.1	2	0.0	7.2	6.2	2	0.0	4.2	12.5	2	0.0	8.3	0.0	2			
EX-3 ⁽⁷⁾	0.0	0.0	21.1	0	1.0	2.8	1.4	2	nm	7.2	4.2	0.0	2	2.2	3.9	5.2	2	4.9	9.5	0.0	2	6.7	8.6	0.1	2	1.1	3.9	0.1	2	0.0	0.1	19.9	2	0.0	0.1	19.5	2	0.2	7.1	2.3	2			
EX-4 ⁽⁷⁾	nm				4.5	0.3	11.5	2	nm	16.1	0.8	0.0	2	9.7	0.8	3.4	2	10.6	4.4	0.7	2	22.2	2.4	0.1	2	0.8	6.4	1.3	2	4.9	2.7	2.6	2	0.0	0.0	20.2	2	0.0	4.0	4.0	2			
EX-5	nm				29.8	0.3	6.6	2	nm	11.1	3.9	0.5	2	21.8	5.0	1.6	2	11.8	6.5	0.0	2	25.9	7.6	0.0	2	0.0	0.2	18.4	2	2.9	2.5	11.6	2	0.0	0.0	20.1	2	0.0	0.2	19.7	2			
EX-6	nm				2.3	2.5	0	0	nm	5.0	2.6	0.1	2	0.0	0.0	20.6	2	1.4	3.6	1.7	2	4.2	2.8	0.3	2	0.0	0.6	15.5	2	0.0	0.0	20.2	2	4.2	2.4	1.8	2	1.7	1.6	0.0	2			
EX-7	nm				0.0	0.4	19.2	2	nm	0.0	4.5	6.4	2	0.0	0.7	17.4	2	0.0	10.3	0.0	2	0.0	8.5	0.3	2	0.0	5.1	10.6	2	0.0	0.0	20.3	2	0.0	0.0	20.0	2	0.0	7.9	0.0	2			
EX-8 ⁽⁷⁾	nm				0.0	0.0	20.3	2	nm	0.0	2.2	10.5	2	0.2	1.7	14.2	2	0.6	7.7	0.0	2	1.2	8.5	0.0	2	0.3	10.7	0.0	2	0.0	0.0	19.8	2	0.0	0.0	19.8	2	0.0	6.2	1.8	2			
EX-9	nm				3.2	3.6	0	2	nm	9.1	4.4	0.1	2	5.1	3.6	7.3	2	9.6	5.2	0.0	2	13.1	5.6	0.0	2	1.3	9.3	0.0	2	1.4	5.5	0.0	2	1.0	5.2	0.0	2	1.6	5.4	0.0	2			
EX-10 ⁽⁷⁾	nm				1.9	1.1	5.9	2	nm	0.0	0.3	18.7	2	0.0	0.0	20.9	2	0.1	1.8	16.0	2	2.9	1.6	13.3	2	0.4	7.5	1.9	2	1.1	1.7	13.9	2	0.0	0.0	20.2	2	0.0	0.9	17.6	2			
EX-11	nm				18.7	0.0	13.8	2	nm	25.5	1.9	1.9	2	0.0	0.0	20.8	2	5.6	7.7	0.0	2	6.6	6.8	2.2	2	0.8	0.2	14.1	2	0.0	0.0	20.4	2	0.0	0.0	20.2	2	0.0	0.4	7.8	0.0	2		
EX-12	nm				0.3	2.4	5.9	2	nm	3.4	3.2	0.3	2	0.0	0.0	20.8	2	5.6	7.7	0.0	2	12.2	2.9	0.6	2	0.3	3.7	2.3	2	0.0	0.1	19.8	2	0.5	1.1	15.8	2	0.0	0.0	18.6	2			
EX-13	nm				0.0	2.6	2.2	2	nm	0.0	5.0	1.7	2	0.0	3.8	16.6	2	0.0	0.9	0.0	2	0.0	5.4	10.7	2	0.0	4.2	14.4	2	0.0	2.1	16.4	2	0.0	0.0	22.1	2	0.0	0.0	22.1	2			
EX-14	nm				0.0	1.5	10.4	2	nm	0.5	3.1	0.0	2	0.4	3.7	8.3	2	0.6	9.0	0.0	2	0.0	8.6	1.0	2	0.0	0.0	20.5	2	0.3	3.9	14.0	2	0.0	0.0	5.5	0.0	2						
EX-15	nm				nm				0.8	5.8	0.0	2	1.0	2.0	10.8	2	3.7	6.1	0.0	2	0.1	1.1	16.5	2	0.1	4.5	4.1	2	0.0	0.3	19.3	2	0.0	0.0	22.3	2	0.0	0.0	22.3	2				
EX-16 ⁽⁷⁾	nm				nm				11.0	4.3	0.1	2	8.9	4.9	2.1	2	12.0	6.8	0.0	2	12.2	6.7	0.0	2	2.0	10.3	0.1	2	0.9	11.8	0.3	2	0.1	1.7	16.2	2	1.6	7.0	0.0	2				
EX-17	nm				nm				14.6	3.1	0.0	2	2.8	1.9	15.1	2	20.0	3.8	0.0	2	16.8	4.0	0.2	2	13.3	5.2	0.1	2	6.0	5.2														

Table 4

Methane Monitoring
quarterly Progress Report #23 (October, November and December 2018)
Former Dearborn Refining Site
Dearborn, Michigan

Location ID	3/24/2014				5/5/2014				8/15/2014				9/19/2014				12/11/2014				3/9/2015				6/1/2015				6/10/2015				6/12/2015				8/5/2015				8/7/2015								
	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)									
GP1-12		nm			0.0	5.3	2.5	2	7.4	7.9	0.0	2	0.6	9.3	0.0	2	3.0	5.6	0.5	2	0.2	5.1	0.0	2	5.3	6.0	0.0	2	10.6	6.0	0.0	2	9.7	6.8	0.0	2	14.2	7.1	0.2	2	16.1	6.8	0.0	2					
GP2-12	0.0	1.0	13.1	2	0.0	1.9	10.5	2	0.0	6.5	4.5	2	0.0	6.9	10.7	2	nm	0.0	2.5	16.1	2	0.0	4.5	15.0	2	0.0	6.2	2.2	2	0.0	5.9	5.3	2	0.0	8.6	6.1	2	0.0	8.1	7.7	2	0.0	13.0	3.0	2	0.0	13.6	3.1	2
GP3-12	nm	0.0	0.2	19.6	2	nm			nm				nm				nm	0.0	5.3	4.1	2	0.0	9.7	5.5	2	0.0	8.4	4.9	2	0.0	9.0	5.7	2	0.0	13.0	3.0	2	0.0	13.6	3.1	2								
GP4-12	nm		nm		nm				nm				nm				nm				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				0.0	13.6	5.3	2	0.0	12.9	6.4	2									
GP5-12	nm	0.0	5.4	2.1	2	0.0	8.8	1.4	2	0.0	8.5	3.0	2	0.0	6.4	6.7	2	0.0	4.7	4.0	2	0.0	8.5	0.2	2	0.0	7.7	0.2	2	0.0	8.0	1.8	2	0.0	9.4	2.0	2	0.0	8.8	0.8	2								
GP6-12	nm		nm		nm				nm				nm				6.4	5.1	0.2	2	28.8	7.3	0.0	2	27.4	7.4	0.0	2	26.7	7.8	0.0	2	29.9	9.5	0.5	20 seconds ⁽⁶⁾	32.3	9.1	0.0	2									
GP7-12	nm	0.0	3.9	0.7	2	nm							0.0	12.6	0.1	2	0.0	10.0	5.7	2	0.0	7.0	4.5	2	0.2	9.8	1.3	2	0.0	11.8	1.5	2	0.0	12.8	2.0	2	0.0	16.6	0.8	2	0.0	15.8	0.9	2					
GP8-12	nm	0.0	3.0	15.2	2	0.0	3.6	6.2	2	0.0	2.6	12.0	2	nm	0.0	4.6	2.0	2	0.1	1.7	12.7	2	0.0	4.3	5.6	0.5	0.0	4.5	9.5	30 seconds ⁽⁶⁾	0.0	7.3	6.8	2	0.0	7.2	10.8	20 seconds ⁽⁶⁾											
MPE Exhaust	nm		nm		nm				nm				nm				nm ⁽¹⁾				nm ⁽¹⁾				nm ⁽¹⁾																								
EX-1	0.0	6.2	0.7	2	0.0	8.7	0.0	2	2.4	10.1	0.0	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				0.0	3.1	11.5	2	0.0	4.0	11.4	2	nm												
EX-2	0.5	7.1	0.0	2	1.1	6.4	0.2	2	9.2	5.1	0.0	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				2.3	4.6	5.3	2	4.7	6.4	1.6	2	nm												
EX-3 ⁽⁷⁾	0.2	5.0	5.3	2	0.0	1.0	17.7	2	9.1	1.9	4.4	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				15.5	5.3	1.4	2	4.1	6.5	5.4	2	nm												
EX-4 ⁽⁷⁾	0.0	3.4	3.9	2	0.4	2.5	6.9	2	12.9	3.5	2.4	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				9.7	3.1	8.8	2	7.0	5.9	4.0	2	nm												
EX-5	0.0	3.1	5.0	2	0.0	1.6	14.1	2	15.2	1.2	12.2	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				5.1	1.2	15.2	2	7.3	5.0	6.9	2	nm												
EX-6	2.6	1.4	0.0	2	2.6	1.6	0.0	2	7.0	2.0	0.0	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				8.3	3.9	0.0	2	12.8	5.7	0.0	2	nm												
EX-7	0.1	7.0	0.0	2	0.3	6.7	0.0	2	3.4	6.2	0.4	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				1.3	5.1	0.0	2	3.9	5.5	0.0	2	nm												
EX-8 ⁽⁷⁾	0.0	5.9	0.0	2	1.3	5.4	0.8	2	12.4	5.4	0.0	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				10.0	6.1	0.0	2	11.2	6.9	0.0	2	nm												
EX-9	3.9	4.0	0.0	2	5.3	3.7	0.0	2	14.7	4.9	0.0	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				10.2	5.6	3.7	2	10.3	6.4	3.9	2	nm												
EX-10 ⁽⁷⁾	1.7	6.7	0.0	2	1.0	4.0	5.0	2	11.9	6.2	1.9	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				17.5	6.0	1.8	2	4.4	4.0	9.7	2	nm												
EX-11	0.2	1.0	16.0	2	0.0	0.9	17.8	2	0.0	0.0	20.7	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				0.0	0.0	18.0	2	0.1	0.0	18.4	2	0.0	0.0	19.5	2	nm								
EX-12	0.0	2.8	4.4	2	0.0	3.2	11.5	2	0.0	0.0	20.8	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				0.1	0.1	17.7	2	0.3	0.6	17.7	2	2.0	1.1	18.5	2	nm								
EX-13	0.0	7.0	1.1	2	0.2	6.7	0.2	2	2.2	5.8	0.0	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				0.5	6.9	0.0	2	0.6	7.5	0.0	2	nm												
EX-14	0.7	4.5	0.0	2	1.3	3.8	0.0	2	9.7	3.3	0.0	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				5.5	3.4	2.1	2	5.3	4.0	2.4	2	nm												
EX-15	0.4	4.3	0.3	2	1.9	3.5	0.0	2	7.2	2.4	0.7	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				9.7	4.0	0.2	2	5.4	5.1	0.5	2	nm												
EX-16 ⁽⁷⁾	4.4	6.1	0.0	2	6.2	5.9	0.0	2	20.6	7.1	0.2	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				24.2	5.8	0.3	2	7.4	6.2	4.0	2	nm												
EX-17	6.7	2.4	0.0	2	8.0	3.2	0.0	2	22.4	4.1	0.1	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				0.9	0.4	17.7	2	8.9	1.2	16.0	2	nm												
EX-18 ⁽⁷⁾	6.3	0.4	0.0	2	8.0	0.3	0.0	2	27.3	0.2	0.0	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				24.8	3.5	1.3	2	0.7	3.1	8.3	2	nm												
EX-19	0.1	5.4	0.5	2	0.1	4.3	0.0	2	0.8	5.5	0.0	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				0.1	7.5	0.0	2	0.5	7.6	0.0	2	nm												
EX-20	0.1	3.7	4.4	2	0.0	0.0	20.0	2	0.0	0.0	21.2	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				0.0	0.0	18.6	2	0.2	0.2	18.6	2	nm												
EX-21 ⁽⁷⁾	0.8	7.3	0.3	2	2.3	6.1	0.0	2	4.8	5.2	0.8	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				8.5	5.4	1.0	2	1.6	2.7	10.2	2	nm												
EX-22	2.1	6.6	1.7	2	4.5	4.6	0.0	2	11.4	3.2	2.5	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				4.0	1.8	14.3	2	6.5	2.0	14.6	2	nm												
EX-23	3.1	3.2	3.4	2	7.5	3.7	1.3	2	27.3	4.2	1.6	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				1.6	0.4	17.5	2	8.5	1.0	16.4	2	nm												
EX-24 ⁽⁷⁾	2.8	2.3	4.7	2	0.0	0.1	19.7	2	0.5	0.0	21.1	2	nm				nm ⁽²⁾				nm ⁽²⁾				nm ⁽²⁾				15.6	0.6	8.1	2	18.5	2.7	3.9	2	8.4	5.2	4.7	2	nm								
EX-25	0.0	7.3	0.0	2	0.0	6.6	0.2	2	0.0	7.4	3.7</td																																						

Table 4

Methane Monitoring
 Quarterly Progress Report #23 (October, November and December 2018)
 Former Dearborn Refining Site
 Dearborn, Michigan

Location ID	8/27/2015				9/25/2015				11/30/2015				1/8/2016				3/18/2016				5/26/2016				8/12/2016				10/20/2016				12/9/2016				2/27/2017				6/19/2017			
	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time	CH ₄	CO ₂	O ₂	Purge Time				
	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)	(%vol)	(%vol)	(%vol)	(min)				
GP1-12	15.6	7.0	0.0	2	14.7	7.1	0.0	2	12.2	4.8	0.0	2	0.0	5.3	0.1	2	0.0	5.2	2	0.0	9.3	1.7	2	0.0	12.9	1.0	2	0.0	8.6	6.0	2	0.0	5.3	13.3	2	0.0	2.8	17.1	2	0.0	8.0	8.4	1	
GP2-12	0.0	7.7	10.8	2	0.0	7.8	11.1	2	0.0	4.7	14.2	2	0.0	3.5	13.2	2	0.0	2.4	15.4	2	0.0	4.1	7.4	2	0.0	5.4	14.3	2	0.0	5.2	14.9	2	0.0	3.2	18.6	2	0.0	1.8	18.8	2	0.1	4.7	16.2	2
GP3-12	0.0	14.0	3.2	2	0.0	12.5	5.3	2	0.0	6.8	6.6	2	nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾							
GP4-12	0.0	10.9	7.5	2	0.0	8.4	14.5	2	0.0	3.2	12.7	2	nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾							
GP5-12	0.0	9.0	3.0	2	0.0	9.0	3.0	2	0.0	8.1	0.5	2	0.0	6.6	1.1	2	0.0	5.6	2.1	2	0.0	6.4	1.6	2	0.0	11.4	0.0	2	0.0	8.3	3.2	2	0.0	6.2	4.7	2	0.0	3.3	11.9	2	0.0	7.1	4.5	2
GP6-12	33.3	9.1	0.0	2	32.8	8.7	0.0	2	20.0	7.1	0.0	2	30.3	5.6	2.4	30 seconds ⁽⁶⁾	nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾			
GP7-12	0.0	15.6	0.0	2	0.0	16.4	2.7	2	0.0	13.1	1.0	2	0.0	9.8	4.2	2	0.0	7.7	7.0	2	0.0	9.7	2.2	2	0.0	13.4	2.1	2	0.0	12.7	3.6	2	0.0	5.8	12.8	2	0.0	5.8	10.3	2	0.1	9.5	7.5	2
GP8-12	0.0	5.0	3.9	30 seconds ⁽⁶⁾	0.0	5.0	2.4	30 seconds ⁽⁶⁾	0.1	4.3	2.3	2	0.0	4.3	2.0	2	0.0	4.2	13.9	20 seconds ⁽⁶⁾	0.0	6.0	11.3	30 seconds ⁽⁶⁾	0.0	3.3	6.7	2	0.0	8.0	9.6	20 seconds	0.0	0.0	20.9	2	0.0	2.5	14.8	30 seconds	0.0	5.6	14.6	30 seconds
MPE Exhaust	nm ⁽¹⁾				nm ⁽¹⁾				nm ⁽¹⁾				nm ⁽¹⁾				nm ⁽¹⁾				nm ⁽¹⁾				nm ⁽¹⁾				nm ⁽¹⁾				nm ⁽¹⁾				nm ⁽¹⁾							
EX-1	nm				nm				nm				nm				nm				nm				nm				nm				nm											
EX-2	nm				nm				nm				nm				nm				nm				nm				nm				nm											
EX-3 ⁽⁷⁾	nm				nm				nm				nm				nm				nm				nm				nm				nm											
EX-4 ⁽⁷⁾	nm				nm				nm				nm				nm				nm				nm				nm				nm											
EX-5	nm				nm																																							

Table 4

Methane Monitoring
 Quarterly Progress Report #23 (October, November and December 2018)
 Former Dearborn Refining Site
 Dearborn, Michigan

Location ID	9/13/2017				11/16/2017				3/22/2018				5/17/2018				9/17/2018				9/19/2018				11/29/2018							
	CH ₄ (%vol)	CO ₂ (%vol)	O ₂ (%vol)	Purge Time (min)	CH ₄ (%vol)	CO ₂ (%vol)	O ₂ (%vol)	Purge Time (min)	CH ₄ (%vol)	CO ₂ (%vol)	O ₂ (%vol)	Purge Time (min)	CH ₄ (%vol)	CO ₂ (%vol)	O ₂ (%vol)	Purge Time (min)	CH ₄ (%vol)	CO ₂ (%vol)	O ₂ (%vol)	Purge Time (min)	CH ₄ (%vol)	CO ₂ (%vol)	O ₂ (%vol)	Purge Time (min)	CH ₄ (%vol)	CO ₂ (%vol)	O ₂ (%vol)	Purge Time (min)				
GP1-12	0.0	12.1	3.9	2	0.0	6.4	9.7	2	0.0	4.0	16.6	1	0.0	5.2	1.6	1	0.0	10.1	5.9	2.0	0.0	14.5	6.3	1.0	0.2	4.2	13.2	1.0				
GP2-12	0.0	7.9	13.0	2	0.0	3.2	16.1	2	0.0	2.8	17.9	1	0.0	5.1	5.1	1	0.0	5.0	14.4	1.0	0.0	5.9	15.4	2.0	0.2	3.0	19.4	1.0				
GP3-12	nm ⁽³⁾				0.0	4.4	15.5	2	nm				nm				0.0	6.5	13.9	1.0	nm ⁽³⁾				nm ⁽³⁾							
GP4-12	0.0	6.4	17.2	2	0.0	2.8	14.9	2	nm				nm				0.0	4.3	16.4	1.0	0.0	5.3	16.9	1.0	nm ⁽³⁾				nm ⁽³⁾			
GP5-12	0.0	10.1	0.4	2	0.0	8.1	1.3	2	0.0	5.2	7.0	1	nm				0.0	10.2	0.6	1.0	0.0	14.3	1.0	1.0	0.1	5.8	8.7	1.0	nm ⁽¹²⁾			
GP6-12	60.8	5.0	0.4	2	41.7	4.0	0.4	2	42.7	3.4	0.0	2	nm				33.3	4.5	0.2	2.0	49.7	5.5	0.1	2.0	nm				nm			
GP7-12	0.0	13.9	16.9	2	0.0	11.7	5.5	2	0.0	3.8	12.0	2	nm				0.1	7.8	7.4	1.0	nm ⁽³⁾				nm ⁽³⁾							
GP8-12	0.0	4.0	8.8	2	0.0	0.6	19.9	2	0.0	4.8	13.0	0.33	0.0	4.8	13.0	0.33	nm ⁽³⁾				nm ⁽³⁾				nm ⁽³⁾							
MPE Exhaust																																
EX-1	0.0	1.1	21.7	2	nm				nm				nm				0.1	0.0	20.0	1.0	0.1	0.9	19.2	1.0	nm							
EX-2	1.0	12.0	22.4	2	nm				nm				nm				1.6	2.4	14.6	1.0	9.8	10.2	3.3	1.0	nm							
EX-3 ⁽⁷⁾	0.0	0.2	22.4	2	nm				nm				nm				0.7	0.2	19.5	1.0	0.1	0.0	20.7	1.0	nm							
EX-4 ⁽⁷⁾	0.2	0.2	22.2	2	nm				nm				nm				1.1	0.2	19.3	1.0	0.1	0.0	20.8	1.0	nm							
EX-5	17.5	2.9	14.4	2	nm				nm				nm				22.9	2.9	12.3	1.0	63.0	11.1	2.6	1.0	nm							
EX-6	12.1	8.6	0.2	2	nm				nm				nm				16.1	2.1	11.1	1.0	45.5	6.4	1.9	1.0	nm							
EX-7	5.4	7.4	0.2	2	nm				nm				nm				1.1	1.0	16.2	1.0	13.0	8.0	0.4	1.0	nm							
EX-8 ⁽⁷⁾	0.0	0.1	22.5	2	nm				nm				nm				0.6	0.6	18.3	1.0	0.1	0.0	20.7	1.0	nm							
EX-9	6.2	10.7	2.0	2	nm				nm				nm				0.9	0.5	18.9	1.0	14.7	11.7	5.9	1.0	nm							
EX-10 ⁽⁷⁾	0.0	0.1	22.8	2	nm				nm				nm				0.6	0.0	20.0	1.0	0.1	0.0	20.7	1.0	nm							
EX-11	0.6	0.2	22.3	2	nm				nm				nm				0.2	0.1	19.8	1.0	0.2	0.5	11.6	1.0	nm							
EX-12	11.0	3.5	14.1	2	nm				nm				nm				27.8	2.0	11.8	1.0	80.7	8.6	1.3	2.0	nm							
EX-13	0.6	8.5	0.0	2	nm				nm				nm				1.5	5.4	5.9	1.0	2.8	10.0	0.4	1.0	nm							
EX-14	3.3	4.9	8.8	2																												

Attachment A.1 Inspection Logs

WELL INSPECTION SUMMARY⁽¹⁾

PROJECT NAME:

Former Dearborn Refining Site - 3901 Wyoming Avenue, Dearborn, Michigan

PROPERTY OWNER:

City of Dearborn

INSPECTION CREW MEMBERS:

D. Canfield / P. Biela

SUPERVISOR: _____

DATE OF INSPECTION:

11 29 18
(MM DD YY)

To

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Sediment	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
MW1-08	N/A	✓	N/A	✓		6.88		
MW2-08		✓		✓		1.32		
MW3R-08		✓		✓		4.44		
MW4-08		✓		✓		*		
MW5-08		✓		✓		1.98		
MW6-10		✓		✓		8.66		DTP: 7.62
MW7-10		✓		✓		10.36		DTP: 7.15
MW8-10	↓	✓	↓	✓		7.35		

Additional Comments:

* cap frozen to riser

Notes:

- (1) Inspections will be completed monthly during operation of the Multi-Phase Extraction (MPE) System and quarterly thereafter for up to 10 years.

WELL INSPECTION SUMMARY⁽¹⁾

PROJECT NAME: Former Dearborn Refining Site - 3901 Wyoming Avenue, Dearborn, Michigan

PROPERTY OWNER: City of Dearborn

INSPECTION CREW MEMBERS: D. Canfield / P. Bielak

SUPERVISOR: _____

DATE OF INSPECTION:

11 29 18
(MM DD YY)

To

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Sediment	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
MW9-10	N/A	✓	N/A	✓				
MW10-10	↓	✓	N/A	✓		7.09		
MW11-11	↓	✓	Y/N	✓		7.55		
MW12-TT						0.5 +		
MW13-11	N/A	✓	N/A	✓				
MW14-11	-	-	-	-		-	-	★
MW15-11	N/A	✓	N/A	✓		2.93		
MW16-11	N/A	✓	N/A	✓		2.80		

Additional Comments:

* covered by roll-off, could not access
+ approximate

Notes:

(1) Inspections will be completed monthly during operation of the Multi-Phase Extraction (MPE) System and quarterly thereafter for up to 10 years.

WELL INSPECTION SUMMARY⁽¹⁾

PROJECT NAME: Former Dearborn Refining Site - 3901 Wyoming Avenue, Dearborn, Michigan

PROPERTY OWNER: City of Dearborn

INSPECTION CREW MEMBERS:

D. Canfield / P. Bielak

SUPERVISOR: _____

DATE OF INSPECTION:

11 29 18
(MM DD YY)

To

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Sediment	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
TW1	N/A	/	N/A	*		5.42		DTP: 5.27
TW2	NA	-	N/A	-		-		+

Additional Comments:

* - riser broke at coupler at ground surface, levels are from break in riser.
+ - connel not open well

Notes:

- (1) Inspections will be completed monthly during operation of the Multi-Phase Extraction (MPE) System and quarterly thereafter for up to 10 years.

GAS PROBE INSPECTION AND MONITORING SUMMARY⁽¹⁾

PROJECT NAME:

Former Dearborn Refining Site - 3901 Wyoming Avenue, Dearborn, Michigan

PROPERTY OWNER:

City of Dearborn

INSPECTION CREW MEMBERS:

D. Confield / P. Bielak

SUPERVISOR: _____

DATE OF INSPECTION:

1 | 1 | 2 | 9 | 1 | 8
(MM DD YY)

To

Gas Probe I.D. Number	Lock	Surface Seal	Protective Casing	Pressure Reading	Time of Reading	Measurement Method	Other Comments
GP-01	N/A	✓	N/A	0.00	11:05	digital manometer	
GP-02		✓		0.00	11:10		
GP-03		✓		1.70	11:15		
GP-04		✓		0.38	11:20		
GP-05		✓	↓	0.04	11:08	↓	
GP-06		—	—	—	—	—	+
GP-07		✓	N/A	—	11:25	digital	
GP-08	↓	✓	N/A	1.98	11:30	manometer	

Additional Comments:

* under water, did not open

Notes:

- (1) Inspections will be completed quarterly during and subsequent to operation of the Multi-Phase Extraction (MPE) System for up to 10 years.

COVER SYSTEM INSPECTION LOG

Former Dearborn Refining Site - 3901 Wyoming Avenue, Dearborn, Michigan

LOCATION: Dearborn, Michigan

PROPERTY OWNER: City of Dearborn

PROJECT NUMBER: 48041

DATE

INSPECTOR(S): Al Loebach, P.E.

1214118
(MM DD YY)

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
1	Cover System ⁽¹⁾		
	 Surface Conditions	<ul style="list-style-type: none"> - exposed geotextile fabric - erosion and/or sloughing - ponding of water - established vegetative ground cover - subsidence or settlement 	<p>no issues</p> <p>no issues</p> <p>no issues</p> <p>no issues</p> <p>no issues</p>
2.	Stormwater Retention Area and Associated Swale, Grass-lined Ditch, and Berms ⁽¹⁾		
	 Stormwater Management	<ul style="list-style-type: none"> - sediment accumulation (≤ 6 inches in Retention Area) - debris construction - visible signs of erosion - established vegetation - signs of seepage through berms - accumulation of trash 	<p>no issues</p> <p>no issues</p> <p>no issues</p> <p>no issues</p> <p>no issues</p> <p>no issues</p>
3.	Other Site Systems ⁽¹⁾		
	 Site Fencing	<ul style="list-style-type: none"> - integrity of fence - integrity of gates - integrity of locks - placement and condition of signs 	<p>exist. damage no breach along north</p> <p>no issues</p> <p>no issues</p> <p>no issues</p>

Notes:



= OK



= Issues Present

(1) Inspections will be completed monthly during operation of the Multi-Phase Extraction (MPE) System and quarterly thereafter for up to 10 years.

TREATED WATER CONVEYANCE PIPE (UNDER GRAVEL DRIVEWAY) INSPECTION LOG

PROJECT NAME:	Former Dearborn Refining Site - 3901 Wyoming Avenue, Dearborn, Michigan	LOCATION:	Dearborn, Michigan
PROPERTY OWNER:	City of Dearborn		
PROJECT NUMBER:	48041	DATE:	1 2 1 4 1 8 (MM DD YY)
INSPECTOR(S):	<u>Al Loebach, P.E., City of Dearborn</u>		

Item	Inspect For	Action Required	Comments
1	Pipe ⁽¹⁾		
<input checked="" type="checkbox"/>	Condition/	- integrity	No issues
<input checked="" type="checkbox"/>	Functionality	- sediment accumulation	No issues
<input checked="" type="checkbox"/>		- other blockage	No issues

Notes:

<input checked="" type="checkbox"/>	= OK
<input type="checkbox"/>	= Issues Present

(1) Inspections will be completed monthly during operation of the Multi-Phase Extraction (MPE) System and quarterly thereafter for up to 10 years.
Photographs attached.

Attachment A.2 City of Dearborn Site Photographs



Photo 1 – 12/14/2018 Southerly fence line looking east



Photo 2 – 12/14/2018 Westerly fence line looking south



City of Dearborn Site Photographs



Photo 3 – 12/14/2018 Northerly fence line looking west



Photo 4 – 12/14/2018 Easterly fence line looking south



City of Dearborn Site Photographs



Photo 5 – 12/14/2018 Driveway looking south



Photo 6 – 12/14/2018 Driveway looking west



City of Dearborn Site Photographs



Photo 7 – 12/14/2018 Driveway looking north



Photo 8 – 12/14/2018 Pond looking west



City of Dearborn Site Photographs



Photo 9 – 12/14/2018 Pond looking east



City of Dearborn Site Photographs